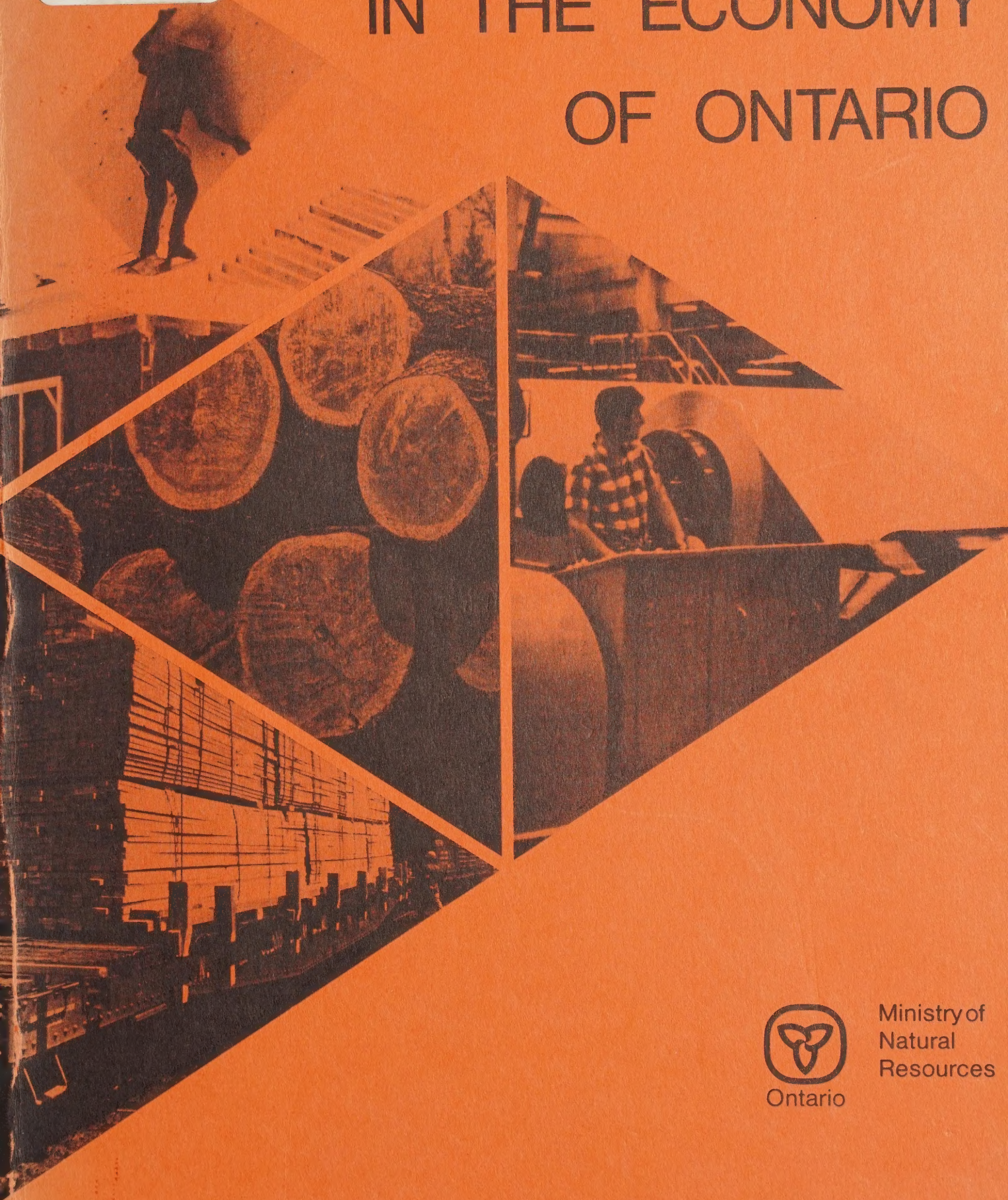


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# THE FOREST INDUSTRY IN THE ECONOMY OF ONTARIO



Ministry of  
Natural  
Resources

Ontario





THE  
FOREST INDUSTRY  
IN THE  
ECONOMY OF ONTARIO

TIMBER SALES BRANCH

1977

TORONTO, ONTARIO



Ontario

Ministry of  
Natural  
Resources

Hon. Frank S. Miller  
Minister

Dr. J. K. Reynolds  
Deputy Minister






# THE FOREST INDUSTRY IN THE ECONOMY OF ONTARIO

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## S U M M A R Y

In 1969, a consulting firm was engaged by the then Department of Lands and Forests to study the impact of the Ontario forest industry on the provincial economy. That firm's findings were reported in "The Ontario Forest Industry: Its Direct and Indirect Contribution to the Economy."

"The Forest Industry in the Economy of Ontario" is an updating of the 1969 study and report. Besides the availability of seven years of additional statistical information (to 1973), a few refinements and clarifications to both the concepts and the methodology were introduced, although the intrinsic nature of the study was preserved in order that important changes, which may have occurred in the interval, should not be masked.

Chapter I defines the term "forest industry" according to the Standard Industrial Classification of Statistics Canada. Included are Logging, the Wood Industries, and the Paper and Allied Industries groups. Products of the forest industry are treated according to the Standard Commodity Classification, also of Statistics Canada.

Following a brief historical background, Chapter II illustrates that the output of primary forest products has remained fairly constant in amount for the past 70 to 80 years, but has undergone strong shifts in composition. The shift is characterized by a much broader spectrum of commercial species and by much closer utilization, especially in trees of small diameters, and in mill residues.

The more than 800 mills of various kinds operating in the province in 1973 gave direct employment to 78,000 persons, and paid out wages and salaries in the amount of \$689 million. The 1973 Gross Provincial Product for Ontario was \$49.8 billion of which the value added by the forest industry was \$1.3 billion, or 2.6 per cent of the total of all activity in the province. This same value added represented 6.0 per cent of the total attributable to all of Ontario's goods-producing industries.

When the province is divided into three economic regions, the analysis shows that the north is the dominant area in terms of wood harvested and the manufacture of primary commodities. The south is dominant in terms of consumer goods, and as a source of other supplies and services. The importance of the forest industry to the north is strongly emphasized by the fact that 76 and 32 per cent of the total employment in manufacturing in the northwestern and northeastern regions, respectively, was forest-oriented. In the more highly industrialized southern region, the forest industry provides only 6 per cent of the total employment in manufacturing.





In the national setting, Ontario accounted for 13 per cent of Canada's timber harvest, 7 per cent of all lumber sawn, 20 per cent of wood pulp production and 26 per cent of all paper goods produced. Perhaps one of the most significant measures to be considered is the degree of manufacture of wood that takes place within provincial boundaries. In this respect, Ontario has reached a level of economic maturity that is unequalled. The value added by the logging and the manufacture of a cunit (100 cubic feet) of roundwood is \$192 in Ontario, \$125 in Quebec, and \$88 in British Columbia. Another manner of expressing this degree of processing is to note that in Ontario every 81 cunits of wood harvested creates a job in the forest industry. In contrast, the national average is such that exactly double this volume of wood must be harvested and processed to support each employee.

By means of input-output analysis, Chapter III establishes that there were, associated with the 78,000 persons directly employed by the Ontario forest industry, another 78,000 persons indirectly employed in the provision of goods and services to the forest industry. The total direct and indirect employment was thus 156,000 persons. In addition, the Ministry of Natural Resources provided 1,150 man-years of employment on a permanent basis, and the equivalent of 970 man-years of employment on a temporary basis in forest management and forest protection activities. These activities were carried out primarily in support of the forest industry.

Chapter IV looks at the cost structure of the forest industry. In 1973, operating expenditures amounted to \$2.6 billion, of which 31 per cent was spent on the acquisition, harvest and transport of wood, 27 per cent on wages and salaries, 22 per cent on miscellaneous items, 4 per cent on purchased fuel and electricity, and the balance on the purchase of various materials and supplies. Capital and repair expenditures claimed an additional \$210 million

Transportation facilities are vital to the forest industry. In 1973, 32.3 million tons of freight were hauled, of which 25.6 million tons consisted of wood, other raw materials, and process equipment inbound to the mills. The remaining 6.7 million tons were primary products outbound from the mills. This is a weight-loss ratio of almost 4 to 1, indicating why much of the industry is located near its raw materials, rather than being market-oriented. Rail, truck, and water carriers were all transfer agents, respectively sharing 27 per cent, 71 per cent, and 2 per cent of this enormous transport activity. The forest industry is estimated to have spent \$184.4 million on freight in 1973, of which 82.1, 15.5, and 2.4 per cent went to rail, truck, and water carriers.



In Chapter V, attention is directed to the public purse as it pertains to the Ontario forest industry. The primary need to examine this relationship derives from the fact that approximately 91 per cent of all forested land in Ontario is owned by the Crown. These lands form the principal source of the roundwood used in the manufacture of needed consumer goods. In 1973, the Ontario forest industry paid \$14.6 million in stumpage charges for the wood harvested, and just over \$2 million in fixed charges, to the provincial government. Corporation income taxes amounted to approximately \$32 million, while employees of the industry are estimated to have paid in excess of \$127 million in personal income taxes. Taxes and fees of all kinds, both direct and indirect, levied on the forest industry and its employees, are estimated to have been \$354 million.

In the 1973-74 fiscal year, the Ontario Ministry of Natural Resources had a total budget of \$158.6 million. Out of this amount, approximately \$31.3 million was spent on forest management and forest protection activities; that is, on activities to maintain or improve the timber resource in support of the forest industry.

Chapter VI looks at areas known to have a significant impact on the economy but which are very difficult to quantify, given the presently available statistical information.

Forest access roads built by the Ontario Ministry of Natural Resources and by the extractive industries totalled almost 12 thousand miles. These resource access roads open vast areas to hunters, fishermen, and other recreationists. While surveys have sampled these groups in an effort to measure their patterns of spending in pursuit of their hobbies, it is difficult to accurately relate such estimates to the existence of access roads.

Farm woodlots still supply a very considerable amount of industrial wood, much of which has a high unit value, but separate statistics on employment and other values in relation to private woodlots are not measured.

The balance of trade is always of concern to the government of a country and the Ontario forest industry is an important net exporter. In 1973, foreign sales amounted to \$650.6 million, comprising 7 per cent of total Ontario exports and more than 14 per cent of Canada's total exports of forest products.





## INTRODUCTION

In 1969 a consultant study was undertaken at the request of the then Department of Lands and Forests, and resulted in a report entitled "The Ontario Forest Industry: Its Direct and Indirect Contribution to the Economy."<sup>1</sup> The data for that analysis were available to the year 1966. The present report is an updating of the 1969 report, and is based on data available to the year 1973.

A number of refinements and clarifications in both methodology and concepts have been incorporated in this report although the basic methodology remains the same as in the earlier study, so that important changes may be detected. It is anticipated that much useful information is presented in readily usable form in this report and that it will reveal to the reader the role of the forest industry in the provincial and regional economies.

The objective of this study is to present measurements of normally-employed economic criteria, in both physical and financial terms. These include value added by manufacture, employment, and transportation volumes that are attributable to the Ontario forest industry. Wherever possible, measurements have been direct. In other cases, the measures have been approximated indirectly.

A chapter has been included on the revenues and expenditures of the forest-related activities of the Ministry of Natural Resources. The reason for this may be found within the Canadian constitution, which gives to the various provinces the control of natural resources within respective provincial boundaries. Ontario has chosen to retain ownership of 91 per cent of its forest lands in the Crown, only granting by means of a licence the right to cut specified species and amounts of timber on designated lands. The licensee pays for timber harvested at contracted rates. Thus the Ministry, as owner of the resource, is directly responsible for its administration and management and exercises an influence on the forest industry both through legislation and regulation and through pricing and spending.

---

<sup>1</sup>Hereinafter to be referred to as "the 1969 study" or "the 1969 report".





CHAPTER I

DEFINITION OF THE FOREST INDUSTRY

1.1 Standard Industrial Classification

For the purpose of this study the term "forest industry" is understood to include Logging, the Wood Industries, and the Paper and Allied Industries groups, as defined in the Standard Industrial Classification (S.I.C., 1970) of Statistics Canada. The main sectors of the forest industry are listed below:

THE FOREST INDUSTRY

S.I.C. No.

Industrial Sector

Logging

031 Logging

0311 Pulpwood Logging  
0319 Logging, N.E.S.

Wood Industries

251 Sawmills, Planing Mills and Shingle Mills

2511 Shingle Mills  
2513 Sawmills and Planing Mills

252 Veneer and Plywood Mills

254 Sash, Door and Other Millwork Plants

2541 Sash, Door and Other Millwork Plants, N.E.S.  
2542 Hardwood Flooring Plants  
2543 Manufacturers of Pre-fabricated Buildings  
(Woodframe Construction)  
2544 Manufacturers of Wooden Kitchen Cabinets

256 Wooden Box Factories

258 Coffin and Casket Industry

259 Miscellaneous Wood Industries

2591 Wood Preservation Industry  
2592 Wood Handles and Turning Industry  
2593 Manufacturers of Particle Board  
2599 Miscellaneous Wood Industries, N.E.S.



## Paper and Allied Industries

- 271 Pulp and Paper Mills
- 272 Asphalt Roofing Manufacturers
- 273 Paper Box and Bag Manufacturers
  - 2731 Folding Carton and Set-up Box Manufacturers
  - 2732 Corrugated Box Manufacturers
  - 2733 Paper and Plastic Bag Manufacturers
- 274 Miscellaneous Paper Converters.

An industry is defined in the Standard Industrial Classification as a group of operating units, i.e. companies or individuals, engaged in the same or similar kind of economic activity, e.g. logging camps, pulp and paper mills, and sawmills. The S.I.C. system itself is subject to revision. For example, the Printing Trades were included with the Paper and Allied Industries group until 1948 and the Furniture and Fixtures Industries were part of the Wood Industries group until 1960.

For this impact evaluation study, the Furniture and Fixtures Industries are not considered to be part of the Forest Industry because the cost of wood is less than half of the total cost of raw materials and this ratio is decreasing with time. Notwithstanding the omission, the Furniture and Fixtures Industries consumed about 60 million board feet or 28 per cent of all Ontario hardwood lumber production in 1973 and gave employment to 21,000 workers. They are therefore of considerable economic significance. Other changes to the S.I.C. within the pertinent time period have been incorporated in the data base of this study.

### 1.2 Standard Commodity Classification

Ontario's forest industry products are extremely varied and include the following commodities as specified by the Standard Commodity Classification (S.C.C., 1972) of Statistics Canada.

<u>S.C.C. No.</u>	<u>Commodity Group</u>
-------------------	------------------------

	<u>Crude Wood Materials</u>
--	-----------------------------

- |     |  |
|-----|--|
| 231 | Logs and Bolts (by species)                              |
| 236 | Pulpwood (roundwood by species)                          |
| 237 | Other Roundwood, Untreated (piling, poles, etc.)         |
| 238 | Pulpwood Chips (by softwood and hardwood)                |
| 239 | Other Crude Wood Materials (Christmas trees, fuel, etc.) |





Wood Fabricated Materials

- 331 Lumber and Sawn Timber (by species)
- 332 Shingles and Shakes (by species)
- 333 Railway Ties, Untreated and Other Sawmill Products (by species and uses)
- 336 Millwork (Woodwork) and Building Components (by products)
- 337 Veneer (by species)
- 338 Plywood (by species)
- 339 Other Wood Fabricated Materials (particle board, tool handles, boxes, charcoal, etc.)

Pulp

- 341 Woodpulp (by classes of dissolving, sulphate, sulphite, groundwood and semi-chemical)

Paper and Paperboard

- 351 Paper for Printing (by classes such as newsprint, book paper and printing paper)
- 352 Fine and Miscellaneous Fine Papers (by writing paper, blotting paper, etc.)
- 353 Tissue Paper and Sanitary Paper Stock (by use)
- 354 Wrapping, Packaging and Related Paper (by use)
- 356 Paperboard (linerboard, corrugating board, etc.)
- 357 Building Paper and Board (asphalt paper, hardboard, etc.)
- 358 Wet Machine Board (by classes such as shoeboards, binder boards, etc.)
- 359 Converted Paper (by classes such as wrapping paper, waxed paper, wallpaper, etc.)





## CHAPTER II

### FOREST INDUSTRY OUTPUT AND VALUE ADDED

#### 2.1 Historical Background<sup>1</sup>

As early as 1683 all suitable timber in the forests of Upper Canada was reserved for the use of the French navy and in 1827 the first stumpage fees were introduced in districts having timber not "fit and proper for His Majesty's Navy" but obviously fit for "lesser" uses.

Though trade in timber seems to have played a prominent role in the early commercial development of the province it is only since 1867, the year of Confederation, that a detailed record of timber harvest has been maintained.

Toward the close of the nineteenth century, Ontario experienced its greatest production of white and red pine lumber. The cut of pine from Crown lands during the period between 1890 and 1910 ranged in amount from a low of 508 million board feet (in 1891) to a high of 952 million board feet (in 1896). About the year 1907, when 790 million feet of white and red pine were cut, the great pine era was in decline. Production of these species began to decrease and within three decades was below 150 million board feet.

Recognition of the importance of value added by manufacture was seen as early as 1898 when the provincial government passed legislation providing that all logs cut on Crown lands must be processed in Canada. Even in this early era, exports of forest industry products were of importance to Ontario, as seen by the fact that from 1869 through 1879 they totalled \$3 to \$9 million per year or 15 to 35 per cent of total provincial exports.

- 
- <sup>1</sup>a) F.B. Hough, Report upon forestry; U.S. Govt. Printing Office, Washington, 1880.
- b) J.D.B. Harrison, Economic aspects of the forests and forest industries of Canada; King's Printer, Ottawa, 1938.
- c) Ontario Department of Lands and Forests, The history and status of forestry in Ontario; Toronto, 1943
- d) Ontario Economic Council, A forest policy for Ontario; Queen's Printer, Toronto, 1970.



Early in the twentieth century, the newsprint industry became established in Ontario, and developed rapidly. This further increased the contribution of the forest industry to the provincial economy. It also resulted in the first industrial utilization of the province's extensive Boreal forest, the timber of which was largely unsurveyed at that time.

The forest industry is fundamentally cyclic in nature, with the annual production of primary forest products responding to fluctuations in the general economic climate, particularly those brought about by depressions and wars. Yet over the past seven or eight decades, the trend line of average production has remained fairly constant. The composition of the harvest has, however, changed substantially. There have been strong shifts toward the use of greater numbers of species and of smaller diameter classes of trees. There has also been much closer utilization, especially of mill residues. These changes were made possible largely by the expansion in reconstituted wood products (typically pulp-based goods and particle boards).

The quantity of roundwood produced following the Second World War is shown in Figure 1 and summarized in Table 1. Generally, the role of private land timber has declined from 35 per cent of total provincial production to about 25 per cent, over the past three decades.

## 2.2 Structure of the Industry

There are more than 700 sawmills in Ontario. Well over 500 of them produce less than one million board feet of lumber per year each, and only 22 produce more than 25 million board feet each. Pulp is produced in fourteen major mills (each having an output of more than 400 tons per day) and in ten smaller mills. Of the 22 veneer mills more than half are large, employing at least fifty individuals each. Other miscellaneous product mills number over 60 and one quarter of these are of significant size, each employing at least twenty people.

The Gross Provincial Product (the summation of all value added) for Ontario in 1973 was \$49,846 million; the value added by the goods-producing industries was \$21,453 million. The value added by the forest industry in 1973 of about \$1.3 billion (\$743 million in 1966) was 2.6 per cent of the total value added in Ontario and 6.0 per cent of the value added by all the goods-producing industries. It may be noted that Pulp and Paper Mills constitute the largest part of Ontario's forest industry though they accounted for only 35 per cent of the value added by the forest





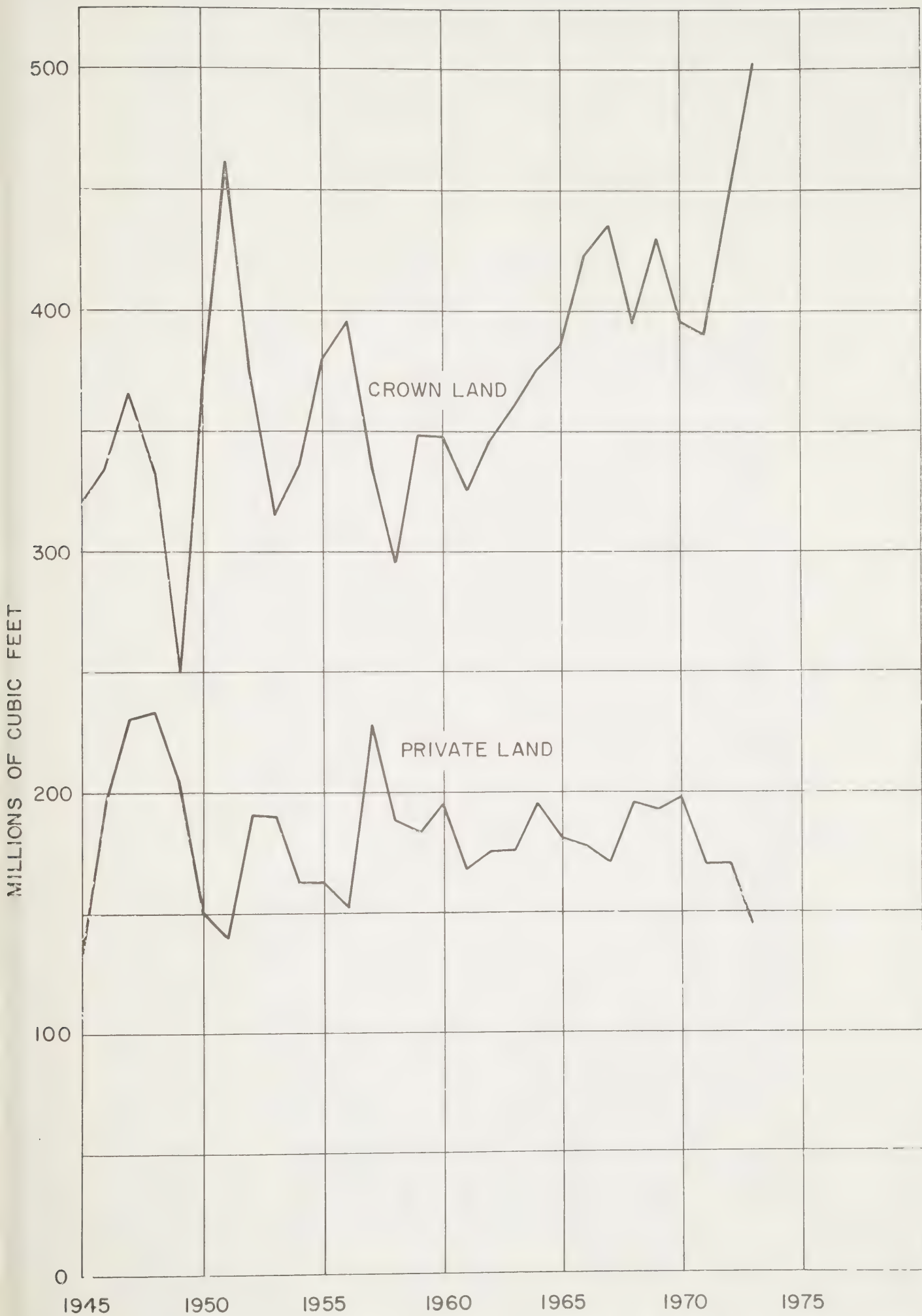


FIGURE 1. ROUNDWOOD PRODUCTION ON CROWN AND PRIVATE LANDS, ONTARIO.





TABLE 1

ONTARIO ROUNDWOOD SUPPLY  
(million cubic feet)

	1946	1956	1966	1970	1971	1972	1973
Industrial Logs & Bolts Pulpwood	143 256	166 318	187 369	182 376	190 335	215 366	225 394
Other <sup>1</sup>	11	4	9	7	7	7	7
Sub-Total	410	488	565	565	532	588	626
Pulp Chips	nil	nil	37	69	73	84	97
Roundwood Shipments out of Ontario	n.a.	n.a.	n.a.	(42)	n.a.	(21)	(38)
Roundwood Shipments into Ontario	n.a.	n.a.	n.a.	58	n.a.	47	51
TOTAL	--	--	--	650	--	698	736

<sup>1</sup>This item includes non-industrial products (poles and pilings, round mining timber, fence posts, rails and hewn ties, and miscellaneous roundwood), but does not include fuelwood and wood for charcoal.



industry in 1973 as compared to 41 per cent in 1966 and 40 per cent in 1970. Sawmills and Veneer and Plywood Mills, which accounted for just under 9 per cent of total value added in 1966, increased to almost 12 per cent in 1973. Other Paper and Allied Industries contributed 29 per cent of the total value added in 1973 and 27 per cent in 1966. When employment is taken as the impact measure, the share of Pulp and Paper Mills in 1973 was 28 per cent; that of other Paper and Allied Industries was 32 per cent and Sawmills and Veneer and Plywood Mills was 12 per cent. The comparable figures for 1966 were 30, 29, and 13 per cent, respectively. The value added and the total employment in forest industry is given in Table 2.

In 1973, the quantity of lumber produced was 1,132 million board feet. Approximately 21 per cent of this was hardwood, as indicated in Figure 2.

Plywood and veneer production has grown substantially in the last three decades. The quantities produced are shown in Figure 3, while the value of shipments in 1946, 1966 and 1973 were \$3.7 million, \$38.8 million and \$56.2 million, respectively. Originally, only birch was used for veneer but the industry now also utilizes several other hardwood species. However, the bulk of veneer exported to the United States is still birch. More than half the plywood produced is from poplar. Ontario-produced softwood plywood came on the market only around 1966.

Wood-using industries other than sawmills and planing mills or veneer and plywood mills had selling value of shipments of approximately \$328 million in 1973 compared to \$142 million in 1966 and \$317 million in 1970.

Pulp mills in Ontario have more than doubled their output since 1946, largely through the expansion and conversion of existing facilities. In 1973, sulphate or kraft pulp, which is the product of greatest growth, accounted for 38 per cent of total pulp produced. Pulp production figures are shown in Figure 4 and Table 3. Additional data in regard to the main grades of paper and paperboard shipped by mills are given in Table 4. Other paper and allied industries, including paper and paperboard converters, had product sales of \$480 million in 1966 and \$816 million in 1973.





TABLE 2

VALUE ADDED AND EMPLOYMENT<sup>1</sup> IN THE ONTARIO FOREST INDUSTRY, 1966 and 1973  
(Total Activity Basis)<sup>1</sup>

Sector	Value Added			Employment		
	1966		1973	1966		1973
	Million \$	Per cent	Million \$	Per cent	Number	Per cent
Logging	105	13.7	146	11.4	11,110	15.1
Sawmills & Planing Mills	47	6.1	118	9.3	6,227	8.5
Veneer & Plywood Mills	18	2.4	32	2.5	3,003	4.1
Other Wood Industries	70	9.2	160	12.5	9,880	13.5
Wood Industries	135	17.7	310	24.3	19,110	26.1
Pulp & Paper Mills	310	40.6	452	35.4	21,811	29.7
Other Paper & Allied Industries	214	28.0	370	28.9	21,311	29.1
Paper & Allied Industries	524	68.6	822	64.3	43,122	58.8
TOTAL	764	100.0	1,278	100.0	73,342	100.0

<sup>1</sup>Total activity includes production and related workers plus sales and administrative personnel.



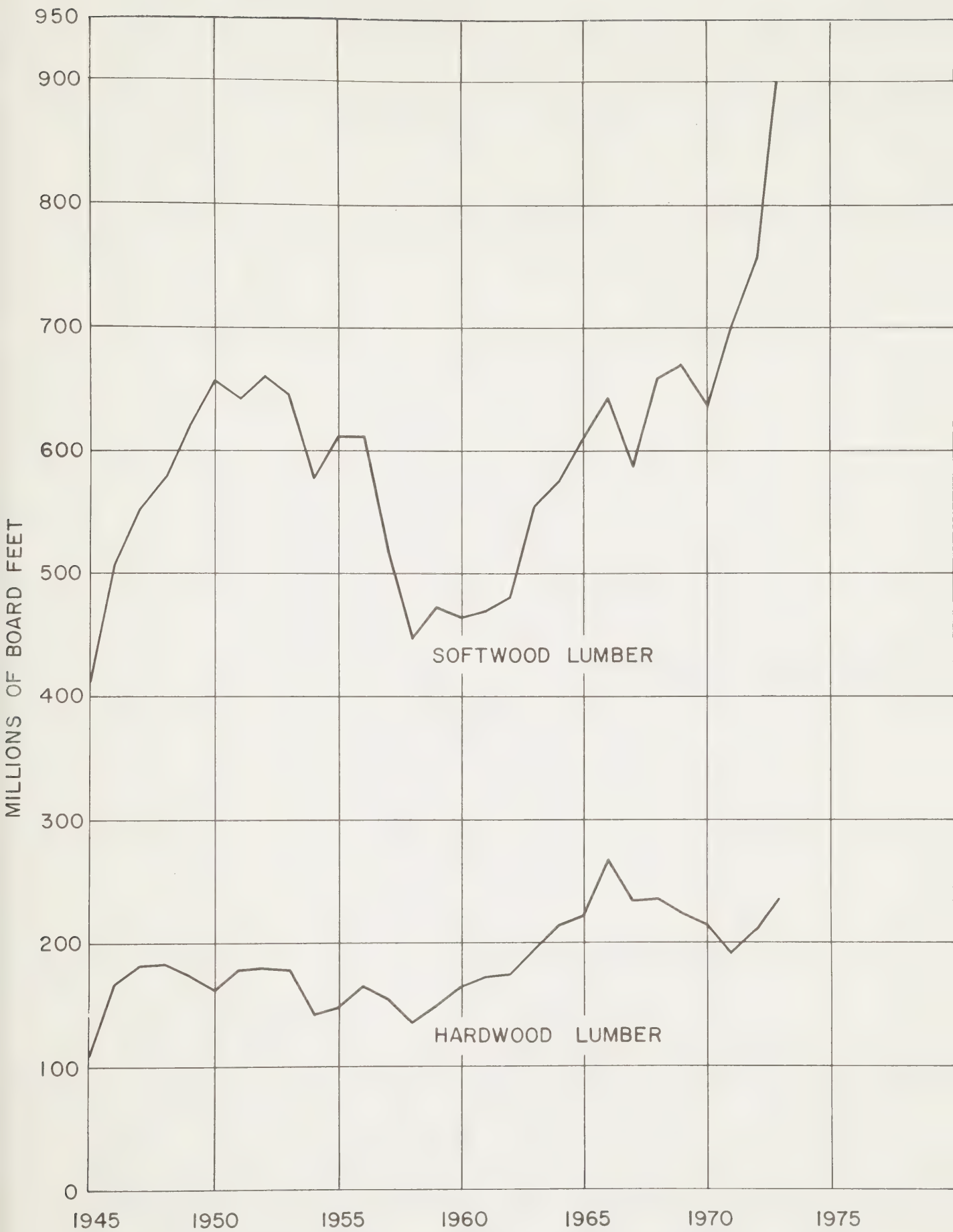


FIGURE 2. SOFTWOOD AND HARDWOOD LUMBER PRODUCTION , ONTARIO .





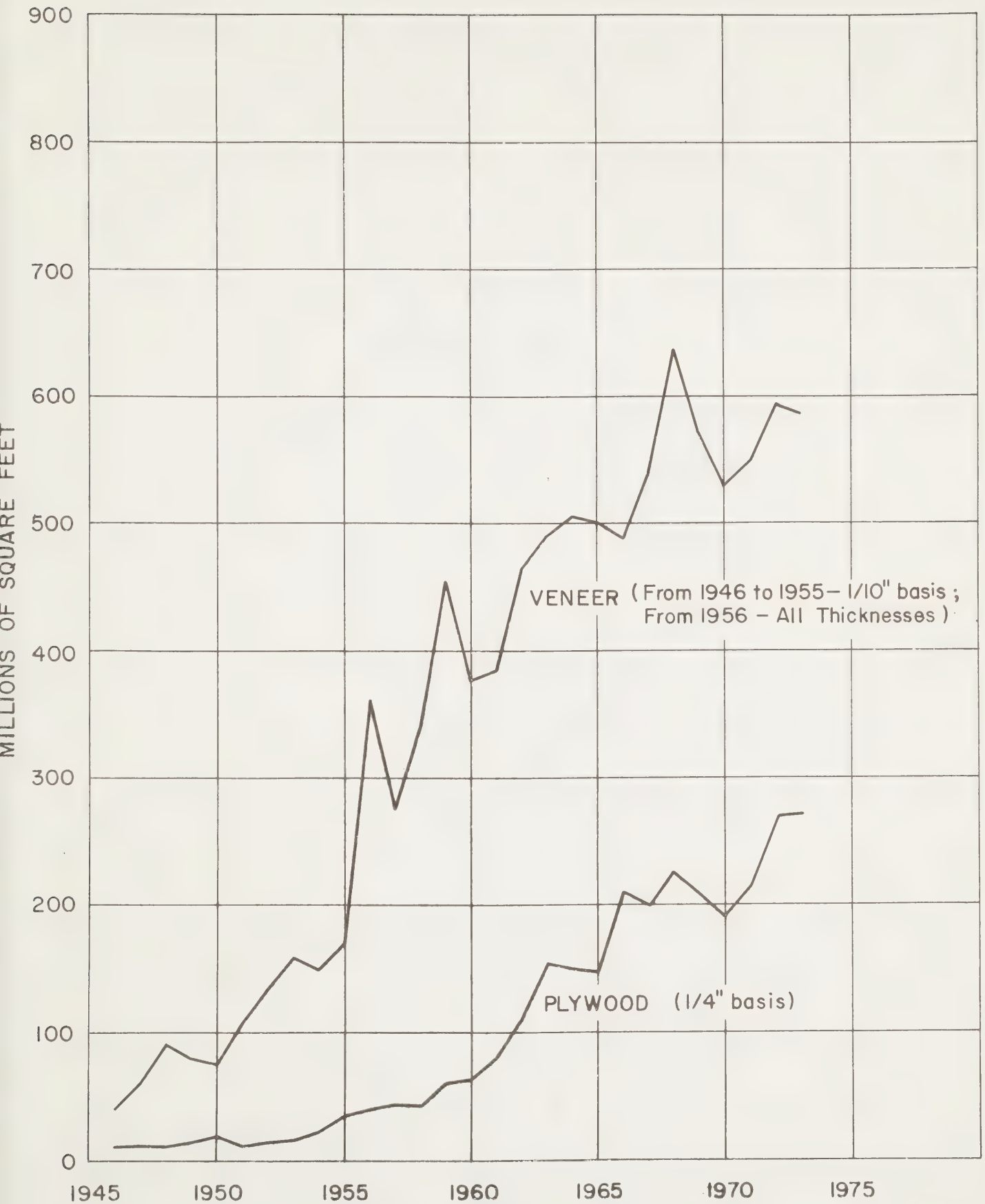


FIGURE 3. PLYWOOD AND VENEER PRODUCTION, ONTARIO.



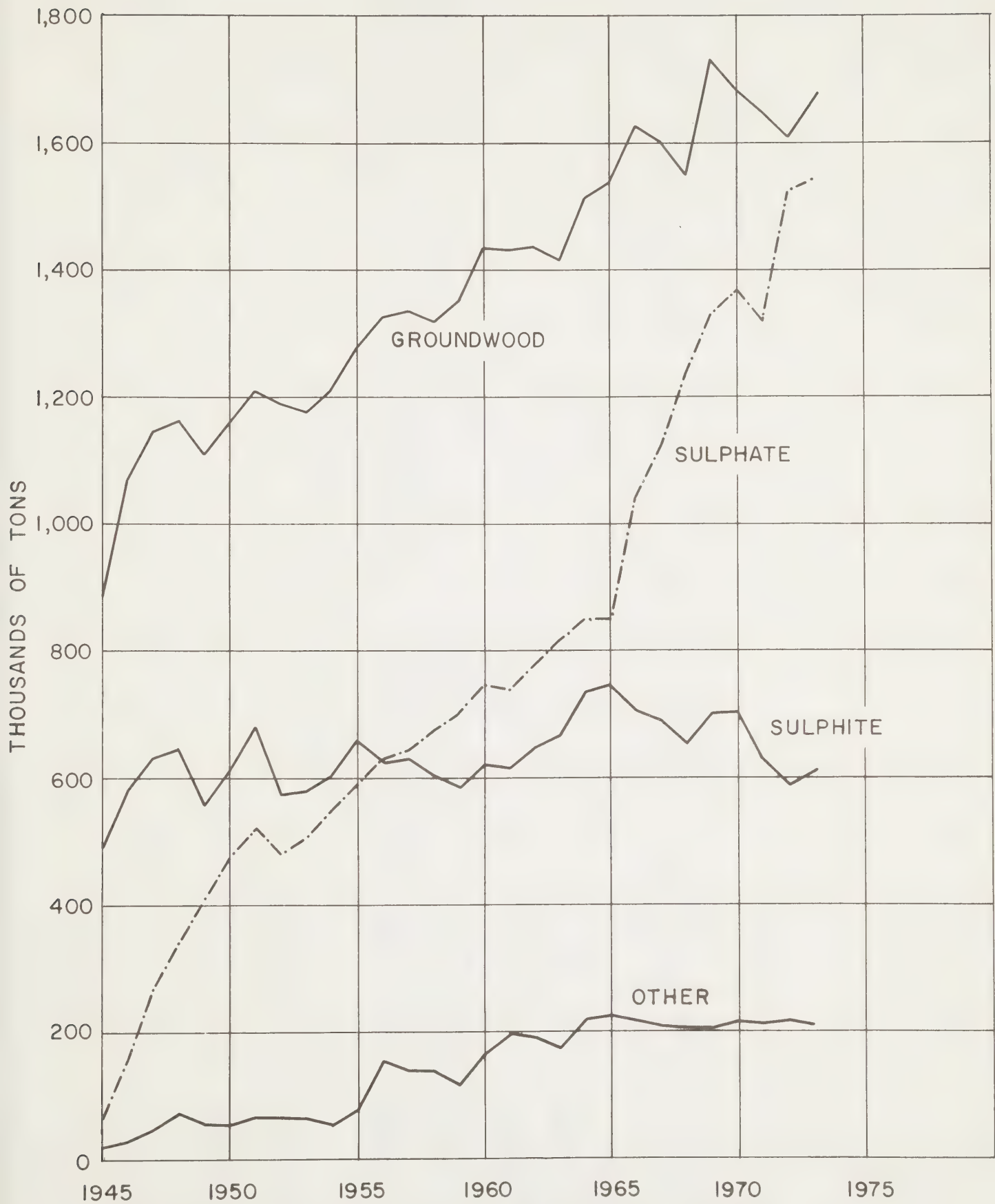


FIGURE 4. WOOD PULP PRODUCTION BY TYPE , ONTARIO .





TABLE 3  
ONTARIO PULP PRODUCTION BY TYPE

TYPES	1946		1966		1970		1973	
	Quantity '000 tons	Per Cent	Quantity '000 tons	Per Cent	Quantity '000 tons	Per Cent	Quantity '000 tons	Per Cent
Groundwood	1,069	58.1	1,625	45.3	1,683	42.4	1,686	41.7
Sulphite	581	31.6	707	19.7	703	17.7	613	15.2
Sulphate	157	8.6	1,038	28.9	1,368	34.5	1,541	38.1
Other	31	1.7	217	6.1	215	5.4	204	5.0
Total	1,838	100.0	3,587	100.0	3,969	100.0	4,044	100.0

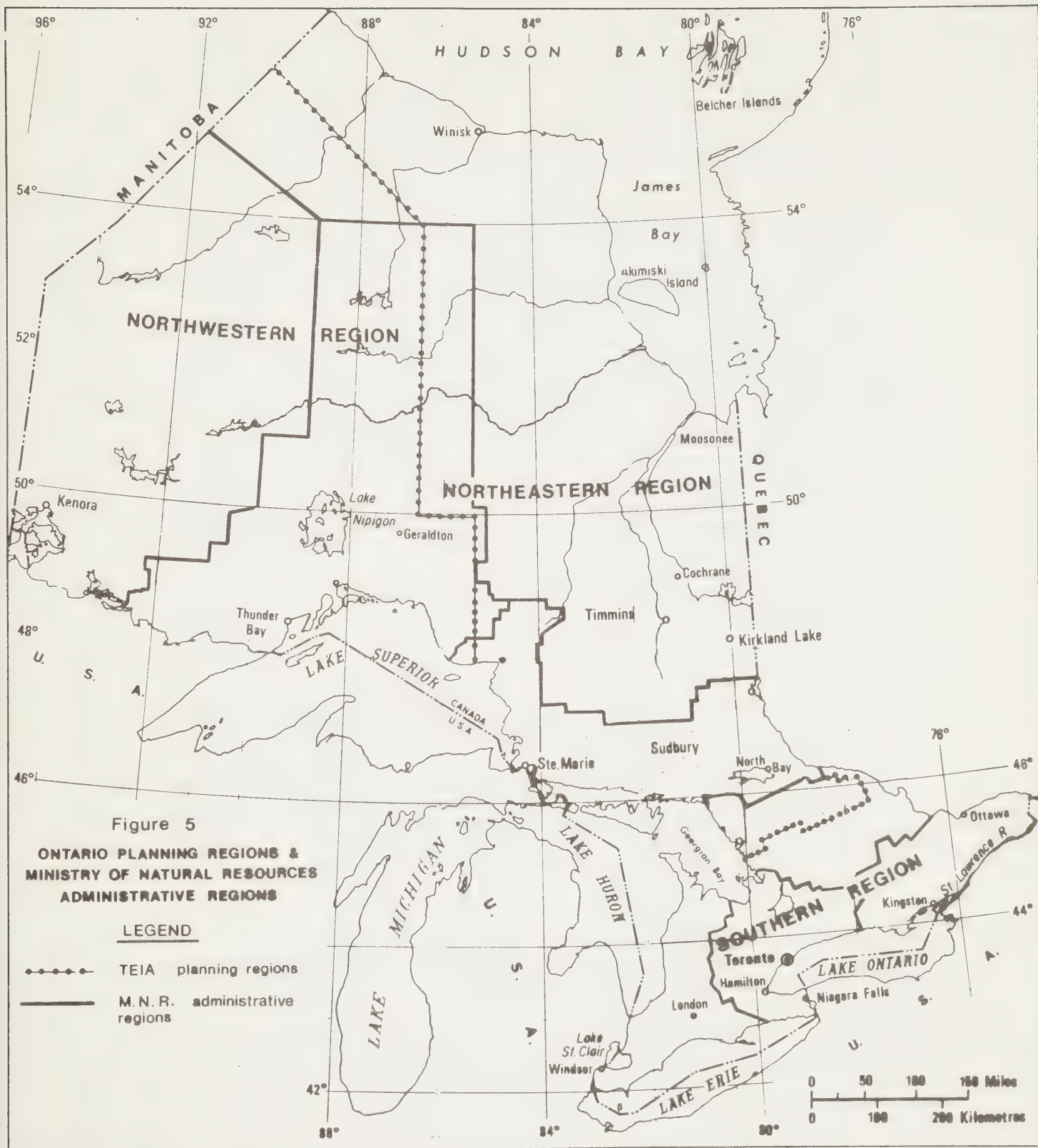


TABLE 4  
MILL SHIPMENTS OF BASIC PAPER & PAPERBOARD, ONTARIO

	1966			1973		
	Quantity '000 tons	Per Cent	Value (Million \$)	Quantity '000 tons	Per Cent	Value (Million \$)
Newsprint	1,845	62.9	235	1,959	57.1	294
Printing & Writing	407	13.9	112	564	16.4	189
Wrapping	85	2.9	23	95	2.8	35
Paperboards	531	18.1	72	719	20.9	123
Other Paper	66	2.2	15	96	2.8	24
Total	2,934	100.0	457	3,433	100.0	665
						100.0









## 2.3 Regional Distribution and Importance of the Industry

Figure 5 shows the three major economic regions of Ontario. The Northwestern and Northeastern Regions are the same as used by the Regional Planning Branch of the Ontario Ministry of Treasury, Economics and Inter-governmental Affairs while the Southern Region shown combines three of that Ministry's regions. These regions do not coincide with the administrative districts or regions of the Ministry of Natural Resources.

Characteristics of the regional distribution of the forest industry are summarized in Table 5. This table illustrates that the forest industry relies heavily upon the natural resources of the north. However, employment is greatest in the south, where the secondary converting plants are concentrated. This pattern has developed naturally in accord with economic influences governing optimum mill location. In addition to its wood acquisitions the forest industry purchases large amounts of supplies, equipment, and services. Some 46 per cent of such goods and services were purchased from Southern Ontario, only 2 per cent from Northern Ontario and the majority (52 per cent) derived from outside of the Province.

The forest and mining industries and tourism are currently the three mainstays of the economy in the north, providing the majority of employment opportunities.

While Table 5 illustrates how total employment within the forest industry was distributed between the regions, another important statistic is the share of manufacturing employment within the regions that was attributable to the forest industry. That relationship is illustrated by the following figures:

	<u>1966</u>	<u>1972</u>
Northwestern Region	69 per cent	76 per cent
Northeastern Region	31 per cent	32 per cent
Southern Region	6 per cent	6 per cent
<hr/>		
Ontario	8 per cent	10 per cent

## 2.4 The National Setting

In terms of the development of secondary and tertiary industries, the forest economy of Ontario has now reached a degree of maturity that exceeds all other provinces by a considerable margin. In 1973, Ontario



TABLE 5

REGIONAL DISTRIBUTION OF THE ONTARIO FOREST INDUSTRY

(Per Cent)

	North- western	North- eastern	Southern	Total
Total Area (1963)	60	28	12	100
Productive Forest Land (1963)	46	45	9	100
Merchantable Timber Volume (1963)	40	50	10	100
Roundwood Production	50	32	18	100
Employment in Manufacturing Activity	20	20	60	100
Value of Production from Sawmills and Planing Mills	16	49	35	100
Value of Production from Veneer and Plywood Mills	20	45	35	100
Value of Production from Other Wood Industries	5	6	89	100
Value of Production from Pulp and Paper Mills	43	23	34	100
Value of Production from Other Industries Allied to Paper	Negli- gible	Negli- gible	100	100





accounted for only 13 per cent of the nation's round-wood production but for 23 per cent of the value added by logging and further manufacturing. Even after several years of rapid growth in other provinces, Ontario maintains a very considerable lead as indicated in Table 6.

In 1973 Ontario had 21 per cent of the area of Canada's forests suitable for regular harvesting and 22 per cent of the volume of merchantable timber. However, it accounted for 13 per cent of total Canadian round-wood harvested, some 7 per cent of lumber output, 20 per cent of wood pulp, and 26 per cent of the paper and board products. Finally, Ontario employed about 78,000 employees in its forest industry, which was equivalent to about 26 per cent of the total for the forest industry in all Canada.



TABLE 6

VALUE ADDED PER CUNIT OF ROUNDWOOD BY LOGGING AND MANUFACTURING  
IN THREE PROVINCES, 1966-1973

(Dollars per cunit)

YEAR	ONTARIO			QUEBEC			BRITISH COLUMBIA		
	Logging	Mfr.	Total	Logging	Mfr.	Total	Logging	Mfr.	Total
1966	17	107	124	15	65	80	17	37	54
1967	17	108	125	16	64	80	18	39	57
1968	17	114	131	15	67	82	19	45	64
1969	18	121	139	15	71	86	20	44	64
1970	19	125	144	15	75	90	17	38	55
1971	19	139	158	15	83	98	18	44	62
1972	19	144	163	16	93	109	22	56	78
1973	22	170	192	20	105	125	24	64	88





### CHAPTER III

#### EMPLOYMENT IMPACT OF THE FOREST INDUSTRY

The forest industry provides employment to a significant portion of the work force in Ontario and the purpose of this chapter is to assess this impact. Examining the forest industry as defined in Chapter I, the number of workers employed in the industry in the year 1973 was found to be about 75,000. But in a world where events in one industry are strongly correlated with events in other industries, it is not always possible to make hard and fast distinctions between them. In fact, we know very well that additional production in the forest industry (as in every other industry) not only creates extra jobs in this particular industry but also creates demands for inputs from other industries that supply raw materials, equipment, supplies, or services to it. Additional production and employment are thus generated in these industries as well. The stimulative impulses originating in one industry result in direct employment and factor earnings in that industry, and indirectly to employment and earnings in other sectors of the economy. Estimates of the relationship between "indirect" employment in the economy resulting from a given "direct" employment in the forest industry, need to be made to better assess the impact of the forest industry in Ontario.

#### 3.1 The Multiplier

In the 1969 study, the concept of a "Basic" to "Non-Basic" employment ratio was used to estimate the indirect employment attributable to direct employment in the forest industry. Surveys in three forest-based communities were used to arrive at the ratio in a reasonably simple and expedient manner but one can seriously question whether figures pertaining to small, single industry towns can be applied with acceptable accuracy to larger regions.

It was therefore decided to examine estimates of the employment "multiplier" arrived at in other ways before accepting or rejecting the figure used in the 1969 report. The most effective manner of accomplishing this was to utilize the Input-Output Model for the Ontario Forest Products Industry, prepared in the Ontario Ministry of Natural Resources in 1974.

Input-output models show how one industry in an economy uses the outputs of other industries and the primary factors of production (land, labour,



and capital) to produce their own outputs, which go toward meeting the final demand composed of consumer, government and investment spending, and exports. When the final demand of a certain commodity increases by a given amount then the model can trace its propagation through the structural linkages of the economy. For example, an increase of one dollar in final demand, all located in the agricultural sector, will call forth a direct increase in the outlay on salaries and wages in the agricultural sector. However, the products of this sector cannot be produced by using only its own primary inputs. Intermediate goods and services from many other sectors will also be required for the purpose, and their production will require a further indirect outlay on salaries and wages. Thus, the total outlay in salaries and wages (direct plus indirect) will be in excess of the direct increase in salaries and wages in agriculture mentioned earlier. The ratio of the direct-plus-indirect to the direct salaries and wages generated due to a one dollar increase in final demand for agricultural products is called the "simple salary and wage multiplier" in the context of input-output models.

The Ontario Ministry of Natural Resources' forest industry input-output model recognized three primary resource sectors viz "Agriculture", "Mining", and "Logging, Fishing and Trapping"; twelve manufacturing sectors belonging to the Statistics Canada S.I.C. groupings of "Wood Industries", "Furniture and Fixture Industries" and "Paper and Allied Industries"; and sixteen other sectors of broad aggregates in the provincial economy. The sectors in the model that correspond to the definition of the forest industry as used in this report and their simple salary and wage multipliers are given in Table 7.

TABLE 7

SIMPLE SALARY AND WAGE MULTIPLIERS	
Forest Industry Sector	Multiplier
Logging, Fishing & Trapping	1.694
Sawmills	2.153
Veneer & Plywood Mills	2.207
Sash, Door & Planing Mills	2.259
Wooden Box Factories	1.905
Coffin & Casket Industry	1.525
Miscellaneous Wood Industries	2.286
Pulp & Paper Mills	2.284
Asphalt Roofing Manufacturers	2.859
Paper Box & Bag Manufacturers	2.501
Miscellaneous Paper Converters	2.814



We are concerned with roughly estimating the number of people employed in non-forest based industries who seem to be there because the forest industry at present requires their output. This can be done if a "simple employment multiplier" can be computed for Ontario's forest industry.

From the salary and wage multipliers of the 1974 study the employment multipliers were calculated as shown in Table 8. The man-hours of employment in each sector are shown also. For the forest industry as a whole, the average employment multiplier, weighted by the actual employment in each constituent industry, was 2.08 based on the 1965 data and 2.15 based on the 1972 data.

The 1969 survey figure was 2.01 in Dryden and 2.13 in Kapuskasing/Hearst. After making rough adjustments for further inter-industry relationships that study arrived at an over-all employment multiplier of 2.73 for Ontario. It was further suggested that this figure was an underestimate and that the correct multiplier was probably in excess of 3.0.

There are reasons to believe that this may not be so. In fact, figures like 2.08 and 2.15 may be overestimates. In any case, our estimates need to be accepted with caution, for the following four reasons.

1. The input-output model for the Ontario forest products industry does not take into account the leakages in income due to imports. The general effect of this is an overestimate of all multipliers.
2. The input-output model divided forest industries into fairly narrow sectors but left the rest of the economy in relatively large aggregates. This tends to distort the multipliers; overstating those pertaining to small sectors while underestimating those referring to larger sectors. The problem stems from what are called crossover effects or internal transactions made among the small forest sectors themselves. If all the economy is recognized as one giant sector then the multiplier is necessarily one. If a number of small sectors are separated from a large sector, then the weighted average multiplier of the small sectors is always more than the simple multiplier of the large sector when there are transactions amongst the small sectors.

We have not only caused distortions that will inflate the employment multiplier due to an aggregation of the non-forest sectors of the economy into a few large ones but also because the composite forest





TABLE 8  
EMPLOYMENT MULTIPLIERS

Sector	Employment in Manufacturing Activity (Thousand man-hours)		Employment Multiplier	
	1965	1972	1965	1972
Logging, Fishing & Trapping	23,244 <sup>1</sup>	15,861	1.694 <sup>1</sup>	1.921
Sawmills & Planing Mills	10,851	10,213	1.454	1.630
Veneer & Plywood Mills	5,140	4,453	1.519	1.568
Sash, Door & Other Millwork Plants	6,799	10,126	1.711	1.705
Wood Box Factories	3,597	3,299	1.353	1.310
Coffin & Casket Industry	1,044	529	1.010	1.155
Miscellaneous Wood Industries	3,688	3,422	1.662	1.730
Pulp & Paper Mills	37,778	36,224	2.560	2.567
Asphalt Roofing Manufacturers	1,097	522	2.748	3.029
Paper Box & Bag Manufacturers	17,631	19,505	2.209	2.210
Miscellaneous Paper Converters	12,737	15,725	2.522	2.429
TOTAL	123,606	119,879	2.08	2.15

<sup>1</sup>In 1965 the figures for the "logging" sector were not separated from Fishing and Trapping.



industry multiplier has been computed as a weighted average as shown in the preceeding paragraph.

3. The primary sector called "logging, fishing and trapping" used in the model includes more than legitimate forest industry activity as defined for the purposes of this report and introduces a distortion. This however, need not necessarily result in an over-estimation of the employment multiplier, only an inaccuracy in its measurement.

4. The multiplier as described here is an average concept which is being used in a marginal sense under the input-output assumption that the average and marginal conditions are identical. We are saying that an additional man-hour employed directly in the forest industry due to an increase in the demand for forest products, indirectly necessitates the employment of an additional 1.08 or 1.15 man-hours in other industries. At the same time we are saying that if there is a total number of 100 people directly employed in the forest industry then another total of 108 or 115 is indirectly employed in other industries. The two statements are not necessarily simultaneously true, particularly in a rapidly changing technological and market environment.

Nevertheless, the employment impact of the forest industry might be underestimated by the employment multiplier computed from the Ontario Ministry of Natural Resources input-output model. The model does not take into account the services provided by the government sector to the forest industry and without which, it may be argued, the outputs of the forest industry could not be produced. The full indirect impact of direct employment in the forest industry should therefore include the employment generated in and through the Forest Management and Forest Protection activities.

For the sake of convenience and in the face of uncertainty regarding such estimates it is proposed to accept, as a first approximation, the figure of 2.0 as the employment multiplier for the forest industry in Ontario. Adjustments will be made later in this chapter to include the employment impact within the Ministry of Natural Resources.

### 3.2 Employment Attributable to the Forest Industry

Direct employment in the forest industry in 1973, as seen in Table 2, was 75,036. This figure included head office workers, administrative and sales personnel, and all production related workers.





In the 1969 report, head office workers, owners and partners were added to production related administrative and sales workers to get a more accurate estimate of employment in the forest industry. But from 1970 the figures for head office workers are not given separately by Statistics Canada and are included in the total employment reported. Therefore, this adjustment is not required in this report for the year 1973. An adjustment is required to account for working owners and partners which are not included in the base data. Table 9 shows the number of such owners and partners and also adjustments in the figure for logging workers as explained below.

The logging sector employment data require specific adjustment to compensate for a national estimate of the average hours per work-week which is too high under Ontario conditions. This results in an upward adjustment of 24 per cent in the number of 7,677 production related workers in logging. The additional figure is approximately 1,800.

A second adjustment in logging also needs to be made as the logging census questionnaire is not sent to small firms. This adjustment adds an estimated 1,000 woods-workers to the forest industry employment figure. The revised employment figures are shown in Table 9.

The 1969 report estimated indirect employment due to expenditure on non-wood operating and maintenance supplies by the forest industry and due to capital expenditures on new works. However no such estimates are required as the "multiplier" used in the present report takes into account all indirect effects caused by the forest industry.

Using the figure of 2.0 as the employment multiplier, 78,000 directly employed persons in the forest industry indirectly created another 78,000 jobs in other industries in the economy in 1973 and resulted in a total industrial employment of 156,000.

In Table 5, it is seen that employment in manufacturing activity in the forest industry was in the ratio of 20:20:60 in Northwestern, Northeastern and Southern Ontario. If the same ratios are assumed for indirect employment, then the estimated additional employment is distributed as shown in Table 10.

In addition, employment in the Forest Management and in the Forest Protection activities of the Ministry which may be considered as attributable to the forest industry is shown in this table. Additional information on such employment is given in Table 30.



TABLE 9

REVISED EMPLOYMENT IN THE ONTARIO FOREST INDUSTRY, 1973

Sector	Production & Related Workers	Admin. & Sales	Working Owners & Partners	Adjust- ment	Total
Logging	7,677	1,306	257	2,800	12,040
Sawmills, Planing Mills and Shingle Mills	5,353	1,267	135		
Veneer & Plywood Mills	2,178	256	-		
Hardwood Floor- ing Plants	471	80	2		
Sash, Door & Other Millwork Plants	3,154	853	74		
Wooden Kitchen Cabinet Manu- facturers	1,278	318	27		
Prefab. Building Manufacturers	706	273	-		
Wooden Box Factories	1,676	326	35		
Coffin & Casket Industry	238	73	-		
Miscellaneous Wood Indus- tries	1,820	342	31		
Wood Industries	16,874	3,788	304	Nil	20,966
Pulp & Paper Mills	17,326	3,945	-		
Asphalt Roofing Manufacturers	261	41	-		
Folding Cartons & Set-up Box Manufacturers	3,524	1,020	3		
Corrugated Box Manufacturers	4,380	1,395	3		
Paper & Plastic Bag Manufac- turers	1,632	702	2		
Miscellaneous Paper Converters	7,672	3,493	5		
Paper & Allied Industries	34,795	10,596	13	Nil	45,404
TOTAL	59,346	15,690	574	2,800	78,410



TABLE 10  
MAN-YEARS OF EMPLOYMENT ATTRIBUTABLE TO THE FOREST INDUSTRY, 1973

	Direct Employment in the Forest Industry	Indirect Employment					Total
		Other Industries	Ontario Ministry of Natural Resources				
				Perma- nent	Casual	Sub- Total	
Northwestern Ontario	15,600	15,600	Forest Management	139	155	504	31,704
			Fire Protection	90	120		
Northeastern Ontario	15,600	15,600	Forest Management	269	185	694	31,894
			Fire Protection	120	120		
Southern Ontario	46,800	46,800	Forest Management	372	330	922	94,522
			Fire Protection	160	60		
TOTAL	78,000	78,000		1,150	970	2,120	158,120





## CHAPTER IV

### ANNUAL EXPENDITURES BY THE ONTARIO FOREST INDUSTRY

Within this chapter, the broad subject of industry expenditures is organized for discussion into four main groups, namely : operating expenditures; capital and repair expenditures; transportation; and origin of goods purchased. Some of these topics are further divided for convenience of presentation.

#### 4.1 Operating Expenditures by Sectors

Table 11 presents details of these data for the industrial sectors and for selected years. There are four main groups of expenditures, three of which are self-evident. The fourth, called 'others' includes depreciation, taxes and stumpage, return on capital, most non-operating overhead, and some prepaid freight. Due to the fact that sales of one sector become purchases of another sector, there is inevitably some double counting in these figures.

#### 4.2 Capital and Repair Expenditures

The capital and repair expenditures in Logging, the Wood Industries, and the Paper and Allied Industries since 1950 are shown in Figure 6.

Average annual expenditures for the three-year period from 1971 to 1973 are given in Table 12. The annual amount of \$210 million represents 9.6 per cent of total investment in manufacturing in Ontario.

#### 4.3 Transportation

On average, approximately four tons of raw materials and supplies are delivered to processing plants in the forest industry for each ton of primary finished product shipped out. Thus, transportation is of considerable economic significance, and the discussion that follows is designed to reveal the tonnages of major goods hauled to and from the mills, the modes of transportation employed, distances traversed, rate structures, and revenues generated.



TABLE 11  
ESTIMATED DISTRIBUTION OF FOREST INDUSTRY EXPENDITURES  
IN RELATION TO VALUE OF SHIPMENTS; 1966, 1969 and 1973

(Million \$)

Sector	Year	Fuel & Elec- tricity	Raw Materials		Operating & Maintenance Supplies	Containers & Packaging	Office Sup- plies	Wages & Salaries	Others	Selling Value of Shipments
			Wood	Non-wood						
Logging	1966	6	66	-	20	-	-	70	29	191
	1969	7	73	-	23	-	-	80	28	211
	1973	8	81	-	32	-	-	99	35	255
Wood Industries	1966	5	106	19	8	1	1	80	54	274
	1969	6	127	42	8	1	1	96	61	342
	1973	11	171	80	17	2	1	154	145	581
Paper & Allied Industries	1966	46	346	118	43	18	2	253	276	1,102
	1969	54	435	137	51	31	3	317	271	1,299
	1973	75	546	221	56	32	4	436	378	1,748
Total Forest Industry	1966	57	518	137	71	19	3	403	359	1,567
	1969	67	635	179	82	32	4	493	360	1,852
	1973	94	798	301	105	34	5	689	558	2,584



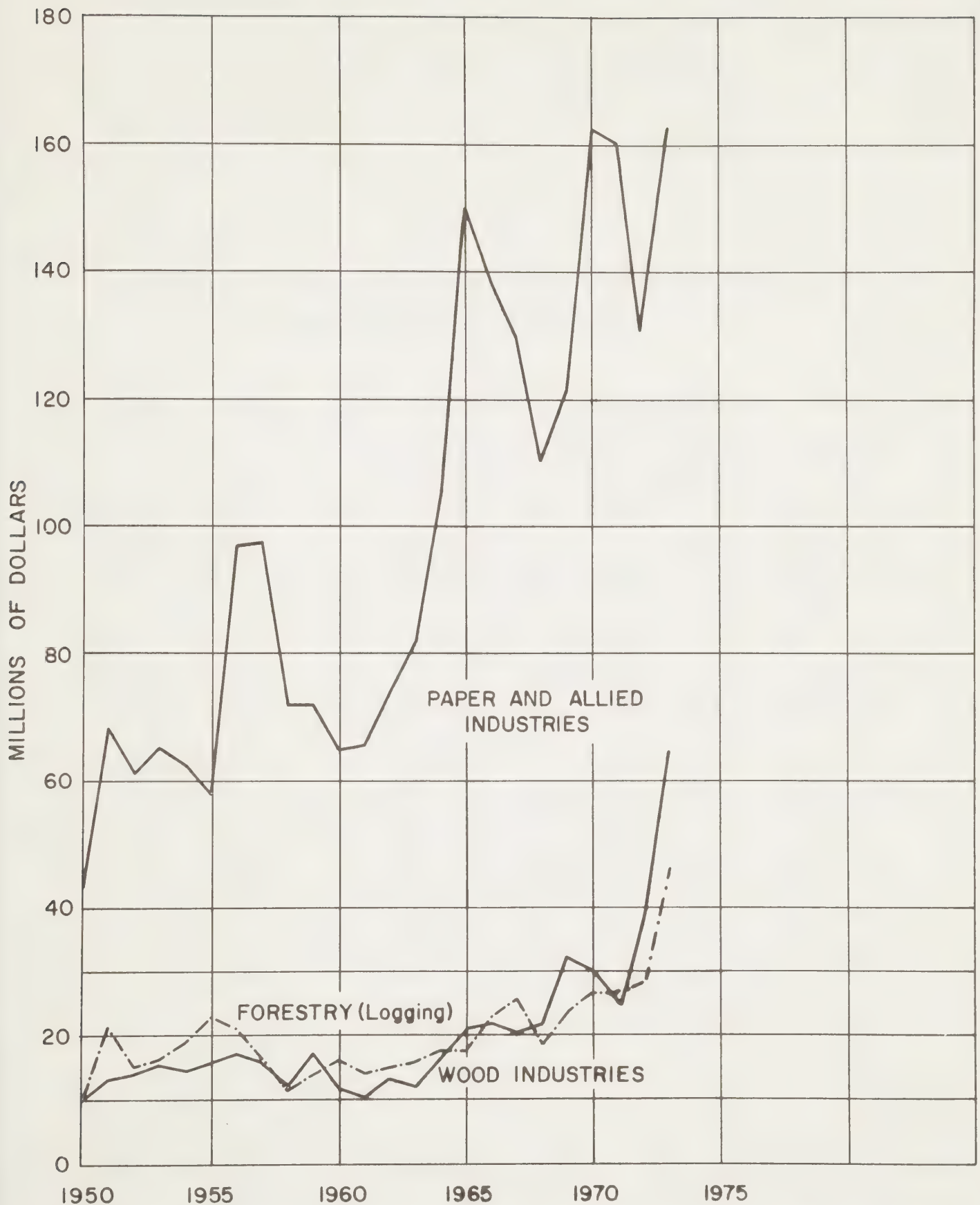


FIGURE 6. FOREST INDUSTRY CAPITAL AND REPAIR EXPENDITURES, ONTARIO.





TABLE 12  
FOREST INDUSTRY, CAPITAL AND REPAIR EXPENDITURES,  
ANNUAL AVERAGE FOR 1971-73  
(Million \$)

	Logging	Wood Industries	Paper & Allied Industries	TOTAL
Capital				
Construction	3.1	5.8	14.7	23.6
Machinery & Equip.	7.9	14.9	68.4	91.2
Sub-total	11.0	20.7	83.1	114.8
Repair				
Construction	3.4	1.2	5.2	9.8
Machinery & Equip.	16.5	7.3	61.6	85.4
Sub-total	19.9	8.5	66.8	95.2
Capital & Repair				
Construction	6.5	7.0	19.9	33.4
Machinery & Equip.	24.4	22.2	130.0	176.6
TOTAL	30.9	29.2	149.9	210.0



### Freight inbound to the mills

Roundwood is by far the largest item of inbound freight. In 1973, approximately 651 million cubic feet was produced of which 525 million cubic feet was softwood. Using the density factors of 55 and 75 pounds per cubic foot, including bark, for softwoods and for hardwoods respectively, 14.4 million tons of softwoods and 4.7 million tons of hardwoods, or 19.1 million tons in total, are estimated to have been delivered to mills.

The growth in production of, and trade in, pulp chips as by-products of Ontario sawmills and veneer mills has been truly remarkable, as indicated below:

1960	0.15	million bone dry tons				
1965	0.41	"	"	"	"	"
1970	0.77	"	"	"	"	"
1973	1.36	"	"	"	"	"

Since pulp chips are usually shipped green, with a unit volume weight twice that of dry chips, the inbound freight, after adjustment for in-plant transfers, is estimated at 2.5 million tons in 1973. The volume of roundwood, chips, and other residues brought into Ontario from other provinces and the United States is estimated to be 50 million cubic feet as shown in Table 1. Most of this material was softwood. Using a density of 55 lbs. per cubic foot for the total volume gives a freight weight of approximately 1.4 million tons.

Operating supplies going to the mills are also freight items. In 1972, 1.16 million tons of coal and petroleum fuel, 0.82 million tons of chemicals, and 0.42 million tons of machinery, equipment, containers, packaging, etc. were estimated to have been moved in Ontario. In the same year an estimated 21.48 million tons of Ontario produced roundwood, imported wood and chips were moved in the Province. Using the same ratios as existed in 1972 between the weights of non-wood and wood inputs, the quantities of fuel, chemicals and machinery, etc. moved in 1973 are estimated to be 1.24, 0.88 and 0.45 million tons, respectively.

The total inbound freight in 1973 was therefore 25.57 million tons.



### Freight outbound from the mills

To avoid double counting, only primary products are included in the following estimates.

Paper and paperboard production in 1973 amounted to 3.56 million tons. This was made up of 1.95 million tons of newsprint, 0.80 million tons of paper board, and 0.81 million tons of miscellaneous papers. In addition 923 thousand tons of pulp were exported to foreign countries from the Province. It is therefore estimated that at least 950 thousand tons were shipped out of Ontario without further manufacture.

In 1973, about 959 million board feet of softwood and 238 million board feet of hardwood lumber were produced. Using average shipping weights, the total weight of lumber shipped is estimated to be 2.06 million tons. Plywood production was 274 million square feet in  $\frac{1}{4}$ " equivalent thickness. At 800 pounds per thousand square feet, the plywood weight is 109,600 tons. In addition 588 million square feet of veneer weighing about 58,800 tons was produced. But since a good share of this veneer is included in the plywood total just given, the combined weight estimate is 130,000 tons for the year.

The total outbound shipment of primary products thus totals 6.70 million tons.

### Total Freight

The inbound and outbound freight tonnages are summarized in Table 13. The ratio of primary products to other traffic is 1:3.8, which means that for every ton of primary product shipped from the mills by the forest industry, another 3.8 tons is moved into the mills in the form of wood, raw materials, other supplies and equipment.

Table 14 shows a breakdown of the several classes of forest industry goods transported by kind of carrier, both in tons and per cent. For comparison, 1966 percentages are included and these indicate that trucking is competing successfully with rail and water transfers. A further comparison of interest is that the total rail freight loaded in Ontario in 1973 amounted to 54.91 million tons of which crude and manufactured forest products were 7.36 million tons, representing 13.4 per cent of total freight activity.





TABLE 13  
APPROXIMATE TONNAGE OF FREIGHT CARRIED FOR  
THE FOREST INDUSTRY - BY MAJOR COMMODITY, 1973  
(Million tons)

	Tonnage	Percent- age
Raw Materials		
Roundwood harvested in Ontario	19.10	
Pulp chips produced in Ontario	2.50	
Imported roundwood and chips	<u>1.40</u>	
Sub-total	23.00	71.3
Primary Products		
Newsprint	1.95	
Other paper and board	1.61	
Pulp	0.95	
Lumber	2.06	
Veneer & plywood	<u>0.13</u>	
Sub-total	6.70	20.7
Other Supplies & Equipment		
Coal & Petroleum fuels	1.24	
Chemicals	0.88	
Machinery & Others	<u>0.45</u>	
Sub-total	2.57	8.0
TOTAL	32.57	100.0



### Freight Revenue

It is difficult to get a precise measure of the total freight revenue earned by public carriers in Ontario for the movement of products to and from forest industry operations. However, as in the 1969 study, a crude estimate is made for the purpose of judging the impact of the Ontario forest industry on the Province's transportation sector.

Data obtained from the Ontario Ministry of Transportation and Communications pertaining to Northern Ontario gave the 1971 average rail rates per ton of freight for raw materials, primary products, and supplies as \$9.00, \$25.00 and \$16.00, respectively. The estimated average rates per ton for the whole province for 1973 are therefore being taken as \$9.00, \$27.00 and \$17.00 per ton for the same classes of materials. The revenue from the 8.68 million tons of rail freight shown in Table 14 was estimated as \$151.44 million.

TABLE 14

FREIGHT GENERATED BY THE ONTARIO FOREST INDUSTRY  
BY CARRIER, 1973

(Million tons)

	Rail	Truck	Water	Total
Wood Raw Material	3.64	19.26	0.10	23.00
Primary Products	3.30	3.27	0.13	6.70
Equipment & Supplies	1.74	0.47	0.36	2.57
Total	8.68	23.00	0.59	32.27
Percentages - 1973	27	71	2	100
- 1966	39	56	5	100

For the truck hauling of raw wood, the present study assumed a 1973 rate of 12 cents per cunit-mile. Further assumptions were that 84 per cent of all roundwood was truck-hauled; that 20 - 30 per cent of this material was trucked commercially; and that the average distance hauled was 60 miles. The revenue to commercial truckers in this activity was estimated to be \$9.5 million. In the absence of more definitive data, the total truck revenue including that from the hauling of chips, lumber, plywood, and supplies of various kinds was taken as three



times the revenue in public trucking of raw wood, or \$28.5 million. This proportion is the same as used in the 1969 report.

Again as in the 1969 report, the revenue from water transportation was taken as 2.5 per cent of the total revenue from rail and truck transport, or \$4.50 million.

In summary, the total freight revenue in 1973 was estimated as:

Rail	\$151.44 million
Truck	28.50 million
Water	4.50 million
All Carriers	184.44 million

#### 4.4 Origin of Goods Purchased by the Forest Industry

Using the same proportion as in the 1969 report, the origin of "Operating and Maintenance" supplies and "Capital and Repair" supplies for 1973 are shown below.

TABLE 15

#### ORIGIN OF NON-WOOD PURCHASED GOODS AND SERVICES, 1973

(Million \$)

Origin	Operating & Maintenance	Capital and Repair	Total
Northern Ontario	3.3	3.2	6.5
Southern Ontario	70.4	75.2	145.6
Western Canada	7.7	6.3	14.0
Eastern Canada (excluding Ontario)	15.7	84.6	100.3
Imports	7.9	40.7	48.6
TOTAL	105.0	210.0	315.0





## CHAPTER V

### PUBLIC REVENUES AND EXPENDITURES

#### RELEVANT TO THE ONTARIO FOREST INDUSTRY

The objective of the first part of this chapter is to quantify the taxes and other revenues that flow to both the provincial and federal governments by virtue of the existence of the Ontario forest industry. The measurements are made both directly and indirectly, as determined by the nature of available statistical information. Discussion is organized under seven revenue classes.

#### 5.1 Ministry of Natural Resources Revenues

It should be clearly understood what is meant by this heading. Like all other Ministries, Natural Resources may collect money on behalf of the Crown within the scope of its assigned responsibilities and functions but all such monies are, with very limited exceptions, payable to the Provincial Treasurer, who deposits them in a common account (The Consolidated Revenue Fund). By the same token, the Ministry expenditures are restricted in kind and amount to budget approved by the Legislature. Thus, it should be evident that, while we may talk of a ministry's revenues and expenditures, it is the government, formed from elected representatives, that wields ultimate control through acts and regulations and through budget allocations. It should also be evident that one cannot attempt to relate ministerial revenues to expenditures, and vice versa, in the same sense that is commonly applied to business in the private sector.

Table 16 shows revenues generated by the Ministry of Natural Resources by major activities, over a seven year period. The forest industry contributes principally to the Timber Account, and it may be noted that stumpage (i.e. the payment for timber harvested) consistently constitutes 80 to 90 per cent of this item. As an aside it may be mentioned that stumpage provides a good example of semantic difficulty; some people prefer to view it as a tax levied on the logging industry while others prefer to view it as value in exchange for a commodity.

Management charges and forest protection charges are fixed charges based on the area of productive land held under licence. The unit rates for the fixed charges were last increased in 1968, while the stumpage rates were last increased in 1974.



TABLE 16

ONTARIO MINISTRY OF NATURAL RESOURCES REVENUE  
(Thousand \$)

Source of Revenue	1967	1968	1969	1970	1971	1972	1973
Stumpage Management Charge	15,006	14,705	17,501	18,325	12,600	13,220	14,609
Forest Protection Charge	118	239	169	218	136	146	143
Nursery Tree Sales	1,519	3,125	2,214	2,310	1,795	1,900	1,843
Miscellaneous	130	159	190	181	197	210	244
	71	120	87	378	813	880	798
Timber, Sub-total	16,844	18,348	20,161	21,412	15,541	16,356	17,667
Provincial Land Tax	1,762	1,755	2,034	1,932	2,014	1,948	2,202
Fish and Wildlife	6,891	8,691	11,146	10,843	9,496	9,725	10,734
Forest Protection	163	129	156	120	186	282	146
Land & Surveys	1,178	1,499	1,726	1,553	790	543	1,704
Parks	2,463	2,444	3,119	3,142	3,562	5,809	6,236
Mining	18,247	21,813	26,655	27,627	16,065	19,102	49,201
Others	137	170	157	176	182	978	1,255
TOTAL	47,685	54,849	65,155	66,805	47,836	54,743	89,145



## 5.2 Logging Tax Revenues

These revenues were collected under The Logging Tax Act, administered by the Ministry of Revenue. The Act was designed to raise additional revenue for the Crown from the sale of timber without placing an unduly heavy burden on loggers operating under marginal conditions. In effect, it was an income tax on logging profits in excess of \$10,000. The rate of tax varied from time to time and the Act was repealed after 1972. Receipts under the Act are shown in Table 17.

TABLE 17

### ONTARIO LOGGING TAX RECEIPTS

Year	Amount (Thousand \$)
1966	2,257
1967	1,745
1968	1,662
1969	1,444
1970	1,977
1971	1,696
1972	637

## 5.3 Corporation Income Tax Revenues

Although Statistics Canada publishes considerable information on taxable incomes and income taxes paid by the various industrial sectors, none of the statistics is directly usable for purposes of this report. Therefore, contributions to corporation income taxes by and through the Ontario forest industry must be estimated indirectly. To this end, three separate estimates were prepared, as follow.

1. It was assumed that the corporation income taxes, both federal and provincial, paid by each division of the forest industry in each province were proportional to their taxable incomes.
2. The tax rate was applied directly to the taxable incomes.





3. This method used the average of percentages on value added, industry employment, and selling value of manufactured products to prorate the total declared taxes in Canada to the Ontario forest industry.

Each of these methods has built-in errors but in the judgment of the analyst the second method probably is the most reliable. Therefore the results of this approach, as given in Table 18, were adopted for use in this report.

TABLE 18  
CORPORATION INCOME TAX--METHOD 2

Year	Taxable Income (Ontario only, Million \$)	Tax Rate (Net Per Cent)			Tax Estimate (Million \$)		
		Federal (on more than \$35,000) <sup>1</sup>	Prov.	Total	Fed- eral	Prov.	Total
1965	82	41	11	52	33.6	9.0	42.6
1966	81	41	11	52	33.2	8.9	42.1
1967	75	40	11	51	30.0	8.2	38.2
1968	80	41	12	53	32.8	9.6	42.4
1969	98	41	12	53	40.1	11.8	51.9
1970	70	41	12	53	28.7	8.4	37.1
1971	54	33	12	45	17.8	6.5	24.3
1972	71	33	12	45	23.4	8.5	31.9

<sup>1</sup>In 1972, the income limit had become \$50,000 for Canadian controlled private corporations.



#### 5.4 Personal Income Tax Revenues

Once again an indirect approach was required and the following two methods of obtaining a measure were tried.

1. The first method consisted of estimating the taxes paid on the average wages and salaries earned by forest industry employees.

The following two assumptions are implicit in this method:

- a) that employees of the forest industry do not have other sources of income and therefore that wages and salaries earned may be treated as assessed income; and
- b) that taxes paid by the forest industry employees are in proportion to their number in each income class in the Province.

Table 19 illustrates the derivation of this estimate.

2. This method was based on the percentage of the total provincial taxable returns sent by the forest industry employees.

TABLE 19

PERSONAL INCOME TAX--METHOD 1

Year	Average Annual Wages & Salaries	Ontario Forest Industry Employment	Average Annual Individual Tax (Fed., Prov., & Social Insurance)	Total Tax Paid by Employees in Ont. Forest Industry (Million \$)
1965	\$5,100	75,000	\$ 508	38.1
1966	5,500	78,000	518	40.4
1967	6,000	77,000	642	49.5
1968	6,300	75,000	783	58.7
1969	6,800	76,000	1,000	76.0
1970	7,400	74,000	1,141	84.4
1971	7,800	72,000	1,250	90.0
1972	8,500	74,000	1,313	97.2
1973	9,200	78,000	1,496	116.7



The implicit assumption here was that all employees of the forest industry had filed tax returns. The calculation for this method is illustrated in Table 20.

Each method contains bias, but the second method is thought to be somewhat more reliable. Therefore, the estimate obtained thereby is carried forward to the summary table.

#### 5.5 Provincial and Federal Sales Taxes

The 1969 study estimated that approximately 70 per cent of the total retail sales tax was paid on purchases made by individuals and 30 per cent was paid on purchases made by business. Assuming these figures to be still applicable, Table 21 derives the sales taxes paid by forest industry employees.

TABLE 21  
THE GENERAL RETAIL SALES TAX  
(Million \$)

Year	Total Provincial Retail Sales Tax Revenue	Retail Sales Tax Paid by Individuals (70% of total Retail Sales Tax)	Proportion of Ontario Employment in the Forest Industry	Tax Paid by Forest Industry Employees
1965	221	155	3.2%	5.0
1966	386	270	3.0%	8.1
1967	436	305	2.8%	8.5
1968	486	340	2.6%	8.8
1969	637	446	2.5%	11.1
1970	674	472	2.4%	11.3
1971	759	531	2.4%	12.2
1972	895	627	2.3%	14.4
1973	1,315	921	2.3%	21.2





TABLE 20

PERSONAL INCOME TAX--METHOD 2

(Million \$)

Year	No. of Taxable Returns	Ontario Forest Industry Employment	Col. 3 as % of Col. 2	Canada Pension Plan Contributions		Federal Tax		Provincial Tax		Old Age Security Tax		Total Income & Old Age Security Tax		Unemployment Insurance Premium	
				All Em- ploy- ees	Forest Industry Em- ploy- ees	All Em- ploy- ees	Forest Industry Em- ploy- ees	All Em- ploy- ees	Forest Industry Em- ploy- ees	All Em- ploy- ees	Forest Industry Em- ploy- ees	All Em- ploy- ees	Forest Industry Em- ploy- ees	All Em- ploy- ees	Forest Industry Em- ploy- ees
1965	2,359,512	75,000	3.2	-	-	959.7	30.7	270.4	8.6	194.9	6.2	1,425.0	45.6	-	-
1966	2,573,462	78,000	3.0	153.1	4.6	1,090.7	32.7	370.5	11.1	219.7	6.6	1,680.9	50.4	-	-
1967	2,703,884	77,000	2.8	161.9	4.5	1,244.9	34.9	503.3	14.1	325.9	9.1	2,074.1	58.1	-	-
1968	2,843,978	75,000	2.6	175.7	4.6	1,561.9	40.6	608.3	15.8	371.7	9.7	2,541.9	66.1	-	-
1969	3,029,719	76,000	2.5	189.3	4.7	2,105.2	52.6	734.9	19.1	420.4	10.5	3,260.4	81.5	-	-
1970	3,137,205	74,000	2.4	200.4	4.8	2,436.0	58.5	852.8	20.5	460.0	11.0	3,748.7	90.0	-	-
1971	3,021,479	72,000	2.4	210.0	5.0	2,688.4	64.5	959.5	23.0	497.3	11.9	4,145.1	99.5	-	-
1972	3,247,559	74,000	2.3	229.2	5.3	3,694.7	85.0	1,128.1	25.9	-	-	4,822.8	110.9	108.5	2.5
1973	3,462,799	78,000	2.3	252.6	5.8	4,155.3	95.6	1,383.2	31.8	-	-	5,538.5	127.4	152.1	3.5



For calculating the retail sales taxes paid by business it is assumed that approximately 15 per cent of the purchases made by the firms was taxable. Table 11 shows that the purchases made by forest industry firms during 1973 were \$1,895 million of which \$284 million is estimated to be taxable. Using a 6.33 per cent tax rate (5 per cent prevailed through April and 7 per cent thereafter), the estimated retail sales tax paid by firms of the forest industry was \$18 million for 1973.

The federal manufacturers' sales tax was 11 per cent in 1966 and was raised to 12 per cent in 1967. This rate has continued until the present time with the exception that tax on most building materials remained at 11 per cent until 1974. In 1975, sales tax on all building and construction material was reduced to 5 per cent. Also, since 1967 there has been no sales tax on production machinery. Thus, not all purchases made by the forest industry are taxable. The purchases of the forest industry (excluding wood, fuel and electricity) amounted to \$1,003 million in 1973. Taking about 10 per cent as taxable and using an average tax rate of 10 per cent gave an estimated \$10.0 million for 1973.

Purchases of fuel and energy by the forest industry are shown in Table 22 for the years 1971, 1972 and 1973. In those years, electricity and all fuels other than gasoline were exempt from federal, provincial and local taxes in Ontario. On gasoline there was no sales tax but a federal gasoline tax equal to 12 per cent of the manufacturer's selling price and a provincial tax of 18 cents per gallon in 1971 and 19 cents per gallon in 1972 and 1973. The Provincial government allowed a refund of 13 cents per gallon for off-highway use. If it is assumed that 95 per cent of the forest industry's use of gasoline was off-highway then the taxes paid to the Province were \$639,185 in 1971, \$776,521 in 1972, and \$862,705 in 1973.

The value of gasoline used in 1971, as shown in Table 22, was \$4,607,000. This included the provincial gasoline tax of \$639,185 as calculated above. The manufacturer's price plus 12 per cent federal gasoline tax accounted for the remaining value of \$3,967,815. The federal tax for 1971, 1972, and 1973 was therefore estimated at \$425,123; \$434,194 and \$526,532, respectively.



TABLE 22

FUEL AND ENERGY CONSUMPTION BY THE ONTARIO FOREST INDUSTRY; 1971, 1972 and 1973

Energy Source	1971				1972				1973			
	Logging	Wood Industries	Paper & Allied Industries	Total	Logging	Wood Industries	Paper & Allied Industries	Total	Logging	Wood Industries	Paper & Allied Industries	Total
<b>Fuel Oil</b>												
Volume ('000 Gal.)	12,028	6,838	94,047	112,913	15,674	8,286	95,342	119,302	17,307	10,743	78,009	106,059
Value ('000 \$)	2,609	1,376	8,964	12,949	3,837	1,831	9,720	15,388	5,296	3,001	9,028	17,235
<b>Gasoline</b>												
Volume ('000 Gal.)	5,190	4,365	1,758	11,313	5,406	4,405	1,866	11,677	5,878	5,338	1,757	12,973
Value ('000 \$)	2,029	1,839	739	4,607	2,125	1,898	806	4,829	2,493	2,480	804	5,777
<b>Natural Gas</b>												
Volume (Million cubic Ft.)	35	1,189	36,712	37,936	49	1,411	39,544	41,004	49	1,508	43,260	54,817
Value ('000 \$)	22	738	16,848	17,608	30	887	19,484	20,401	32	1,174	23,303	24,509
<b>Liquid Petroleum Gas</b>												
Volume ('000 Gal.)	578	241	999	1,818	552	322	1,116	1,990	535	449	1,053	2,037
Value ('000 \$)	167	64	219	450	151	81	256	488	164	103	270	537
<b>Coal</b>												
Volume (Tons)	86	3,710	327,589	331,385	Nil	3,042	295,306	298,348	Nil	2,964	208,738	211,702
Value ('000 \$)	2	76	5,038	5,116	Nil	73	4,894	4,967	Nil	73	3,466	3,539
<b>Firewood</b>												
Volume (Cords)	228	905	Nil	1,133	631	31	Nil	662	Nil	Nil	Nil	Nil
Value ('000 \$)	2	15	Nil	17	4	3	Nil	7	Nil	Nil	Nil	Nil
<b>Electricity</b>												
Volume ('000 KWH)	7,000	185,524	4,243,131	4,435,655	7,000	204,182	4,592,458	4,803,640	8,000	249,000	4,523,000	4,780,000
Value ('000 \$)	104	2,597	31,728	34,429	115	3,030	33,501	36,646	146	3,796	37,776	41,718
<b>Steam</b>												
Volume ('000 Tons)	Nil	43	187	230	Nil	56	157	213	Nil	Nil	Nil	Nil
Value ('000 \$)	Nil	66	581	647	Nil	73	498	571	Nil	Nil	Nil	Nil





## 5.6 Miscellaneous Taxes

There are additional provincial and federal taxes which produce revenue, but there is no method of determining the forest industry share of these items. Included in this group are motor vehicle licences, succession duties, tobacco tax, and land transfer tax.

The federal import duty payable on machinery and supplies purchased by the forest industry is estimated as in the 1969 report. Duty at the rate of 10 per cent was calculated on one-half of the value of the imported equipment shown in Table 15 in the present study. The amount of duty generated was in the order of \$2.5 million for both 1972 and 1973.

## 5.7 Tax Revenues Generated in Other Industries

It was estimated that every job in the forest industry generates another job in other industries. This expansion rate, when applied to personal income tax and general retail sales tax, results in the revenues shown in Table 23.

The contents of this part of Chapter V are recapitulated in Table 24.

TABLE 23

### PERSONAL INCOME TAX AND GENERAL RETAIL SALES TAX

#### PAID BY INDIRECT EMPLOYEES

(Million \$)

Year	Personal Income Tax		Old Age Security Tax	Unemployment Insurance Premium	Sales Tax
	Provincial	Federal			
1965	8.6	30.7	6.2	-	5.0
1966	11.1	32.7	6.6	-	8.1
1967	14.1	34.9	9.1	-	8.5
1968	15.8	40.6	9.7	-	8.8
1969	19.1	52.6	10.5	-	11.1
1970	20.5	58.5	11.0	-	11.3
1971	23.0	64.5	11.9	-	12.2
1972	25.9	85.0	-	2.5	14.4
1973	31.8	95.6	-	3.5	21.2



TABLE 24

## PROVINCIAL AND FEDERAL REVENUES GENERATED AS A RESULT OF FOREST INDUSTRY ACTIVITY IN ONTARIO

Reference	1967		1968		1969		1970		1971		1972		1973	
	Fed.	Prov.	Fed.	Prov.	Fed.	Prov.	Fed.	Prov.	Fed.	Prov.	Fed.	Prov.	Fed.	Prov.
5.1 Ministry of Natural Resources	-	16.8	-	18.3	-	20.2	-	21.4	-	15.5	-	16.4	-	17.7
5.2 Logging Income Tax	-	1.7	-	1.7	-	1.4	-	2.0	-	1.7	-	0.6	-	-
5.3 Corporate Income Tax	30.0	8.2	32.8	9.6	40.1	11.8	28.7	8.4	17.8	6.5	23.4	8.5	NA	NA
5.4 Personal Income Tax	44.0	14.1	50.3	15.8	63.1	19.1	69.5	20.5	76.4	23.0	87.5	25.9	99.1	31.8
5.5 Provincial Retail Sales Tax	-	8.5	-	8.8	-	11.1	-	11.3	-	12.2	-	14.4	-	21.2
(a) Individual	-	NA	-	3.3	-	NA	-	NA	-	NA	-	12.0	-	18.0
(b) Industry	NA	-	3.0	-	NA	-	NA	-	NA	-	7.0	-	10.0	-
Federal Sales Tax	0.5	0.3	1.0	0.4	NA	NA	NA	NA	0.4	0.6	0.4	0.8	0.5	0.9
Gasoline Tax	NA	-	2.0	-	NA	-	NA	-	NA	-	2.5	-	2.5	-
5.6 Import Duty	74.5 (5.0)	49.6 (3.0)	89.1	57.9	103.2 (5.0)	63.6 (6.0)	98.2 (2.0)	63.6 (9.0)	94.6 (3.0)	59.5 (11.0)	120.8	78.6	112.1 (28.0)	89.6 (9.0)
DIRECT REVENUE	44.0	14.0	50.3	15.8	63.1	19.1	69.5	20.5	76.4	23.0	87.5	25.9	99.1	31.8
5.7 Personal Income Tax	-	8.5	-	8.8	-	11.1	-	11.3	-	12.2	-	14.4	-	21.2
Provincial Retail Sales Tax	44.0	22.6	50.3	24.6	63.1	30.2	69.5	31.8	76.4	35.2	87.5	40.3	99.1	53.0
INDIRECT REVENUE	118.5 (5.0)	72.2 (3.0)	139.4	82.5	166.3 (5.0)	93.8 (6.0)	167.7 (2.0)	95.4 (9.0)	171.0 (3.0)	94.7 (11.0)	208.3	118.9	211.2 (28.0)	142.6 (9.0)
TOTAL REVENUE	62	38	63	37	63	37	62	38	62	38	64	36	61	39
FEDERAL-PROVINCIAL TOTAL REVENUE DISTRIBUTION (%)														

Note: (i) - represents not applicable; NA represents not available.

(ii) The numbers in parentheses are estimates of the numbers shown as NA.



## 5.8 Ministry of Natural Resources Expenditures

In this part of Chapter V, attention is directed to expenditures by the Ministry of Natural Resources. After a brief look at the pattern of total spending by programs and services, the focus is turned to expenditures on administration and management of the resources sustaining the forest industry. Ownership of approximately 91 per cent of all forest land in Ontario has been retained in the Crown and these lands form the principal source of the raw wood materials that the forest industry utilizes in the manufacture of needed consumer goods. It is the responsibility of this Ministry to protect the timber and to conserve the productivity of the forest in the best interests of all people of the province, while nurturing a viable industry. Of course, one should try to appreciate that the forest is very versatile in its ability to satisfy human wants. While timber is being grown for commercial and industrial purposes, the forests are providing a host of other services. Thus, money spent ostensibly on timber production will, at the same time, provide the people with a great many additional benefits. For this reason, it is difficult to speak definitively about classes of expenditures.

Four operating programs are recognized by the Ontario Ministry of Natural Resources for administrative and accounting purposes. Table 25 shows the expenditures by these programs for the fiscal year ending March 31, 1974.

The total Ministry spending by main services is shown in Table 26, for the same year. The history of expenditures is traced in Figure 7.

Ministry expenditures directed mainly to the objective of growing trees and making them available to users are classified internally as (i) Forest Management Expenditures and (ii) Forest Protection Expenditures. Expenditures classified to these two operations are given in Tables 27 and 28 for each fiscal year from 1966-67 through 1973-74.

The expenses shown in Tables 27 and 28 are not, of course, amounts spent by the Provincial Government solely for the purpose of growing trees. For example, the forest access roads are used not only by those who harvest timber but also by recreationists and other members of the public. Similarly, the amounts spent on "Forest Protection" are not all attributable to the timber values involved but, to a large extent, for the protection of life and property in towns close to forested areas and for preservation of recreational





TABLE 25

ONTARIO MINISTRY OF NATURAL RESOURCES EXPENDITURES, 1973-74

Programs	Amount (Million \$)	Per Cent
Ministry Administration	20.3	12.8
Land Management	67.2	42.4
Outdoor Recreation	37.3	23.5
Resource Products	33.8	21.3
<b>TOTAL</b>	<b>158.6</b>	<b>100.0</b>

TABLE 26

ONTARIO MINISTRY OF NATURAL RESOURCES

TOTAL EXPENDITURES ALLOCATED TO MAIN SERVICES, 1973-74

Major Services	Amount (Million \$)	Per Cent
Land Management	10.6	6.7
Environmental Protection	14.2	9.0
Parks and Historical Sites	39.2	24.7
Fish and Wildlife	18.2	11.5
Forest Management	32.1	20.2
Mineral Management	11.6	7.3
Conservation Authorities	31.9	20.1
Others	0.8	0.5
<b>TOTAL</b>	<b>158.6</b>	<b>100.0</b>



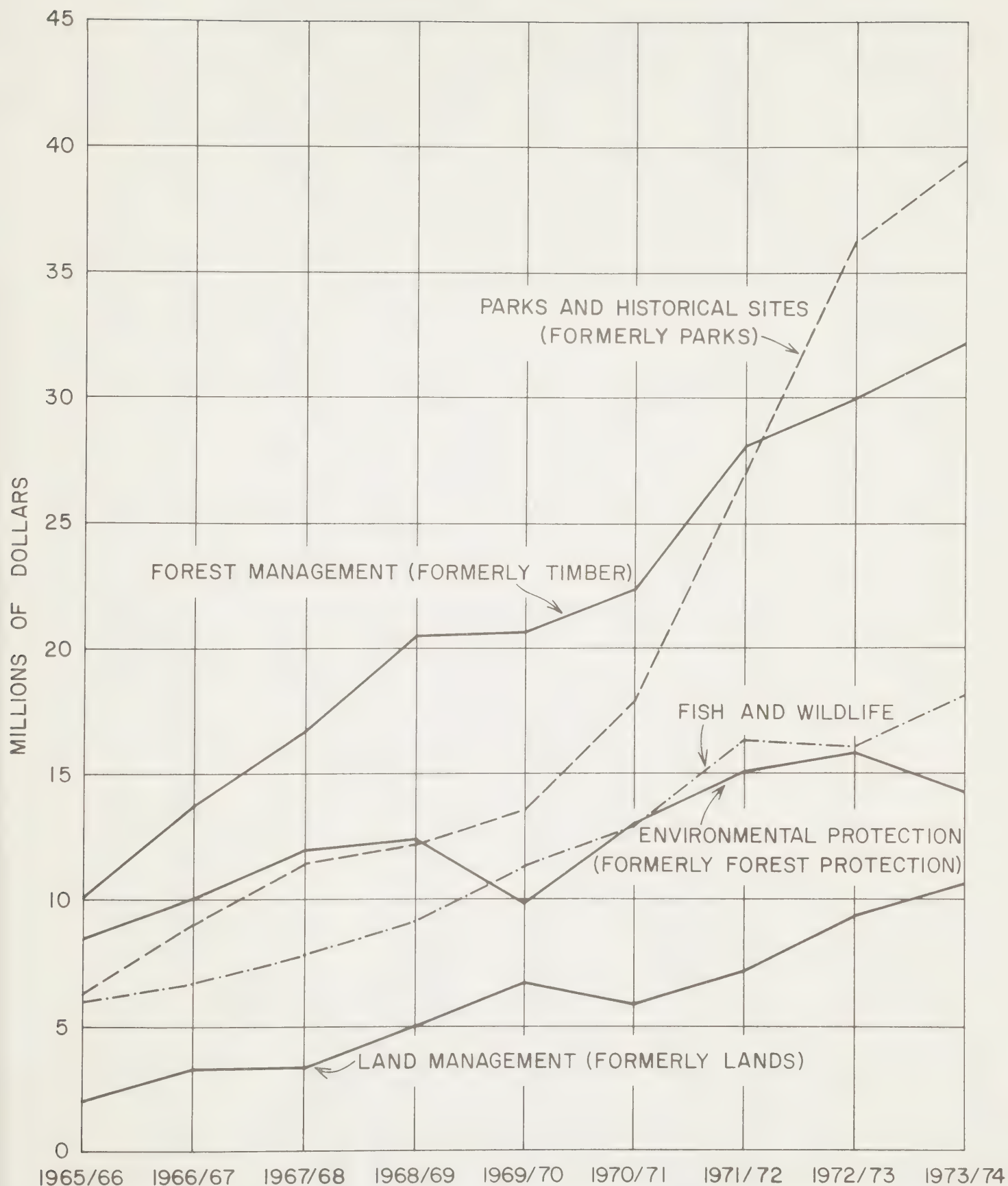


FIGURE 7. GROWTH OF ONTARIO MINISTRY OF NATURAL RESOURCES (FORMERLY DEPARTMENT OF LANDS AND FOREST) EXPENDITURES



TABLE 27

FOREST MANAGEMENT EXPENDITURES, 1966-67 through 1973-74

(Million \$)

	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74
<u>Ministry Administration</u>	1.035	1.253	1.475	1.820	1.881	2.357	3.564	4.527
<u>Forest Resource Production</u>	11.161	12.899	14.864	14.355	15.468	20.209	20.672	21.006
<u>Forest Access Roads - Construction</u>	0.876	1.073	0.660	0.807	0.996	0.763	0.797	1.191
<u>- Maintenance</u>	-	-	-	0.453	0.793	0.938	0.889	0.980
<u>Field Administration</u>	1.008	1.114	1.266	1.568	1.759	2.096	1.687	0.681
<u>Land Acquisition and Development</u>	0.251	0.367	2.165	0.617	0.257	0.071	0.364	0.251
<u>Others, Program Administration, etc.</u>	0.347	0.271	0.308	0.292	0.382	0.251	0.304	0.323
<u>Access to Resources, Surveys, etc.</u>	0.025	0.013	0.016	1.291	1.323	1.222	2.488	3.081
<u>Less Federal Contributions/Reimbursements of Expenditures</u>	(1.126)	(0.430)	(0.362)	(0.690)	(0.618)	-	-	-
<u>Total Forest Management Expenditures</u>	13.577	16.560	20.392	20.513	22.241	27.907	29.765	32.040





TABLE 28

## FOREST PROTECTION EXPENDITURES, 1966-67 through 1973-74

(Million \$)

	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74
<u>Forest Protection</u>								
Extra Fire Fighting	8.147	8.646	9.815	7.152	8.809	9.790	9.651	9.932
Research	0.833	1.796	0.491	0.614	1.475	2.525	3.000	1.149
	0.077	0.054	0.106	0.008	0.025	0.066	0.068	-
Ministry Administration (Pro-rated)	0.710	0.671	0.762	0.851	0.968	1.105	1.743	2.205
Field Administration (Pro-rated)	0.693	0.661	0.755	0.726	1.013	1.144	0.321	0.316
Engineering Services	0.005	0.012	-	0.115	0.326	0.176	0.688	0.627
Construction of Forest Access Roads	-	-	0.307	0.050	0.070	0.011	0.016	0.045
Maintenance of Access Roads	-	-	0.101	0.282	0.191	0.170	0.136	0.139
Geological Service, Shared-Exploration Costs and Land Surveys	-	-	-	-	0.017	0.020	0.164	0.139
Less Federal Contributions	(0.535)	-	-	-	-	-	-	-
Total Forest Protection Expenditures	9.930	11.841	12.337	9.796	12.895	15.006	15.786	14.233



and environmental values of the forests. It is, therefore, only reasonable to assign only a part of some of these expenses to the activity of timber growing. There is no known method for correctly apportioning joint costs to the constituent activities and so a subjective assignment of a certain proportion of these costs to timber growing has been made. Such percentages and the associated amounts are shown in Table 29.

#### 5.9 Direct Salaries, Wages, and Employment

The Forest Management and Forest Protection activities of the Ontario Government tend to be rather labour-intensive. The magnitude of the direct salary and wage payroll is indicated in Table 30, along with the direct employment in these activities. In 1973, these activities provided 1150 permanent jobs and a full-time equivalent of 970 man-years in casual and seasonal employment. The total payroll in 1973 was some \$22.3 million.

TABLE 30  
DIRECT SALARIES, WAGES, AND EMPLOYMENT  
IN ONTARIO GOVERNMENT FOREST ACTIVITIES

ACTIVITY	SALARIES, WAGES & EMPLOYEE BENEFITS (Million \$)	EMPLOYMENT	
		PERMANENT STAFF (Man-years)	CASUAL STAFF (Man-year equivalents)
<u>1971-72</u>			
Forest Management	12.2	802	730
Forest Protection	6.0	370	300
<u>1972-73</u>			
Forest Management	13.5	780	670
Forest Protection	7.0	370	300
<u>1973-74</u>			
Forest Management	15.3	780	670
Forest Protection	7.0	370	300

Additionally, of course, there is an indirect generation of employment and payrolls through the expenditure of contract funds for purchased services, such as consultant studies and the leasing of aircraft and heavy equipment. In conjunction with such contracts, operators and maintenance crews are normally supplied, within the contract cost.



TABLE 29

## FOREST MANAGEMENT AND PROTECTION EXPENDITURES ASSIGNED TO THE TIMBER GROWING ACTIVITY

(Million \$)

Expenditures by Government	Share of Timber Growing Activity	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74
Ministry Administration	100%	1.035 1.035	1.253 1.253	1.475 1.475	1.820 1.820	1.881 1.881	2.357 2.357	3.564 3.564	4.527 4.527
Forest Resource Production	100%	11.161 11.161	12.899 12.899	14.864 14.864	14.355 14.355	15.468 15.468	20.209 20.209	20.672 20.672	21.006 21.006
Forest Access Roads	25%	.876 .219	1.073 .268	.660 .165	1.260 .315	1.789 .447	1.701 .425	1.686 .421	2.171 .542
Field Administration	100%	1.008 1.008	1.114 1.114	1.266 1.266	1.568 1.568	1.759 1.759	2.096 2.096	.687 .687	.681 .681
Land Acquisition and Development	100%	.251 .251	.367 .367	2.165 2.165	.617 .617	.257 .257	.071 .071	.364 .364	.251 .251
All Forest Protection	25%	9.930 2.482	11.841 2.960	12.337 3.084	9.796 2.449	12.895 3.224	15.006 3.751	15.786 3.946	14.233 3.558
Others	25%	.025 .006	.013 .003	.016 .004	1.291 .322	1.323 .331	1.222 .305	2.488 .622	3.081 .770
Total of Costs Assigned to Forest Industry		16.163	18.864	23.023	21.446	23.367	29.214	30.276	31.335





## CHAPTER VI

### SOME OBLIQUE INFLUENCES

The preceding chapters have presented the major influences of the Ontario forest industry on the provincial economy. A number of lesser, but not insignificant, aspects are: Access Roads, Tourism and Recreation, Farm Woodlots, and the Export Trade in forest-based products. A characteristic of all these topics is that the magnitude of the impact is somewhat more difficult to define.

#### 6.1 Resource Access Roads

For persons familiar only with the highly populated and well developed southern fringe of Ontario, it is perhaps difficult to visualize the immense land areas that would be closed to all vehicular traffic if the province's extractive industries did not exist. The forest industry has been one of the great builders of roads into areas where none existed. The government and the other resource industries are partners in this work. Table 31 epitomizes the current distribution of roads by Regions (see Figure 5) and by types. Included in this table are all roads constructed by industry that are open for general use.

Additionally, there are estimated to be in excess of seven thousand miles of roads constructed by the forest industry that, for reasons of safety, are closed to the public, as shown in Table 32.

Again assuming the distribution percentages developed by the 1969 study for resource access roads constructed by the forest industry, the final distribution of roads may be calculated as below:

Northwestern	$6160 + 47\% \text{ of } 7336 = 9,608$	miles
Northeastern	$13883 + 44\% \text{ of } 7336 = 16,611$	" "
Southern	$76061 + 9\% \text{ of } 7336 = 76,721$	" "
	<hr/> 102,940 miles.	

Furthermore, the data given above permit the ratio of resource access roads to all roads to be calculated, as follows:

Northwestern	$(47\% \text{ of } 11894) / 9608 = 58$	per cent
Northeastern	$(44\% \text{ of } 11894) / 16611 = 32$	" "
Southern	$(9\% \text{ of } 11894) / 76721 = 1$	" "
Ontario	$11894 / 102940 = 12$	per cent.



TABLE 31

## AN INVENTORY OF ROADS IN ONTARIO, 1973

Region	Surface	Kings Hwys.	Secondary Hwys.	Regional and County Roads	Municipal Roads	Township Roads	Others (Indian Reserves, Local Board Roads, etc.)	Total
Northwestern	Paved Gravel & stone Earth & other	1,118.5 Nil Nil	733.6 Nil Nil	Nil Nil Nil	313.7 292.3 6.7		152.7 3,208.4 334.1	2,318.5 3,500.7 340.8
	Sub-Total	1,118.5	733.6	Nil	612.7	1,534.8	2,160.4	6,160.0
Northeastern	Paved Gravel & stone Earth & other	2,101.2 Nil Nil	1,240.9 Nil Nil	148.2 25.9 Nil	1,064.9 941.2 338.5		219.1 5,727.0 1,575.8	4,774.3 6,694.1 1,914.3
	Sub-Total	2,101.2	1,240.9	174.1	2,344.6	4,377.1	3,144.8	13,382.7
Southern	Paved Gravel & stone Earth & other	5,547.8 Nil Nil	601.9 Nil Nil	9,341.1 2,262.9 67.0	10,225.8 3,642.6 1,255.1		6,627.3 31,671.3 4,817.8	32,343.9 37,576.8 6,139.9
	Sub-Total	5,547.8	601.9	11,671.0	15,123.5	42,314.5	801.9	76,060.6
Ontario	Paved Gravel & stone Earth & other	8,767.5 Nil Nil	2,576.4 Nil Nil	9,489.3 2,288.8 67.0	11,604.4 4,876.1 1,600.3		6,999.1 40,606.7 6,727.7	39,436.7 47,771.6 8,395.0
	TOTAL	8,767.5	2,576.4	11,845.1	18,080.8	48,226.4	6,107.1	95,603.3



TABLE 32

FOREST ACCESS ROAD CONSTRUCTION AND MAINTENANCE

(Miles)

Year	Ministry of Natural Resources			Forest Industry		Total	
	Built	Im- proved	Main- tained	Built	Main- tained	Built	Main- tained
1965	162	64	1,519	NA	NA	NA	NA
1966	125	102	1,850	NA	NA	NA	NA
1967	146	224	1,840	NA	NA	NA	NA
1968	172	143	2,500	NA	NA	NA	NA
1969	125	89	2,500	NA	NA	NA	NA
1970	110	135	3,000	NA	NA	NA	NA
1971	115	25	3,500	317	6,780	432	10,280
1972	72	47	3,612	312	6,747	384	10,359
1973	110	100	3,811	542	6,926	640	10,737
1974	110	125	4,558	508	7,336	520	11,894

These figures are indicative of the forest industry's contribution to transportation and travel by road in all regions of the province. While no further effort is made to quantify the impact, one merely needs to reflect on our dependence on this mode of transportation in our way of life to realize that the contribution is of considerable importance.

6.2 Expenditures in Recreation and Tourism

While it is generally accepted that significant amounts of money are spent annually on recreation and vacation, historically there has been a great paucity of statistics on actual expenditures. The outlook for future analysts of outdoor recreation is better because Statistics Canada has begun to collect and compile these statistics, and since 1972 has published "Travel, Tourism, and Outdoor Recreation." Other studies, like CORDS (Canadian Outdoor Recreation Demand Study) and TORPS (Tourism and Outdoor Recreation Planning Study) have added much weight to previous demands for reliable statistics. However, for the purpose of this section, which is to measure the relationship between forest





access roads and expenditures on outdoor recreation and tourism, much reliance has been given to surveys conducted by the Division of Fish and Wildlife of the Ministry of Natural Resources. Tables 33 and 34 illustrate that Division's estimate of expenditures by hunters and anglers.

Resource access roads are also extensively used by campers, canoeists, and picnickers. Statistics of expenditures by recreationists of these kinds are not directly applicable. However, by a somewhat lengthy process, it is possible to arrive at such an estimate based on Statistics Canada reports and internal Ministry studies. The estimate shows that outings of these kinds on Crown lands result in expenditures of \$4.7 million in Northwestern Region, \$4.6 million in the Northeastern Region, and \$0.9 million in the Southern Region, or of \$10.2 million throughout the province. There is an insufficient statistical basis for relating these expenditures to existing forest access roads but it may be assumed that such roads do contribute substantially to the sums derived.

### 6.3 The Significance of Farm Woodlots

Of the forest lands in private ownership (roughly 10 per cent of all forest lands), approximately half are large holdings, owned by railway, forest and mining companies, while the other half are in relatively small blocks, operated as part of the farm enterprise. The importance of the farm woodlot has been declining, first in its direct contribution to the business of farming, and second, in the quantity of wood sold to processors.

There are a number of reasons given for this trend but basically it is believed to be a reflection of the change in the technology of farming. When animal power was the principal source of energy used, the farmer relied on the woodlot for the construction and maintenance of buildings, fences, and equipment as well as for heating. Early tractors were not very suitable for working in the woodlot and together with crop and live-stock specialization the farmer lost much of his logging skills. Meanwhile, better roads made the purchase of materials and fuels, which were formerly supplied by the farm woodlot, more attractive.

In 1971 the area of farm woodlots in Ontario was 2.3 million acres, which was 2.2 per cent of the area of all productive forest land; down from 3.1 per cent in 1966.

The value of forest products from farm woodlots was \$5.4 million in 1960, \$3.0 million in 1965, and \$4.0 million in 1970. Other statistics are presented in Table 35.



TABLE 33  
EXPENDITURES INCURRED BY HUNTERS IN ONTARIO  
IN THE YEAR 1973-74 (1ST SEPTEMBER TO 31st AUGUST)

Type of Hunting	Type of Hunter	Total Expenditure (million \$)	Percentage Attributable to Hunting on Crown Land	Estimated Expenditure Due to Hunting on Crown Land (million \$)	Expenditure Per Hunter (\$)
Bear	Non-Resident	2.336	100	2.336	256.00
	Resident	0.255	90	0.223	210.00
Deer	Non-Resident	1.243	90	1.119	252.00
	Resident	9.432	30	2.830	115.00
Moose	Non-Resident	6.070	100	6.070	357.00
	Resident	13.791	100	13.791	186.00
Small game in fall	Non-Resident	2.458	30	0.737	308.00
	Resident	44.323	35	15.513	179.00
Small game in summer	Non-Resident	-	-	-	-
	Resident	3.557	nil	-	217.00
TOTAL		83.465		42.619	



TABLE 34

ANGLING ACTIVITY IN ONTARIO IN 1970  
AND ESTIMATED EXPENDITURE BY NON-RESIDENT ANGLERS

Region	Angling Days Supplied		Expenditure by Non-Resident Anglers (million \$)
	To Residents	To Non-Residents	
Northwestern	2,731,000	1,961,000	42.75
Northeastern	7,478,000	1,331,000	28.11
Sub-Total for Northern Ontario	10,209,000	3,292,000	70.86
Southern	25,116,000	2,236,000	37.58
Total for Ontario	35,325,000	5,528,000	108.44

TABLE 35

FARM WOODLOT PRODUCTION BY PRODUCT AND REGION

(Million Cubic Feet)

Region	Fuelwood		Pulpwood		Logs & Bolts		Total	
	1965	1970	1965	1970	1965	1970	1965	1970
Northwestern	0.4	-	2.2	1.9	-	-	2.6	1.9
Northeastern	1.4	-	2.2	0.5	0.4	-	4.0	0.6
Southern	13.2	1.3	4.3	6.0	7.4	5.0	24.9	12.2
Total	15.0	1.3	8.7	8.4	7.8	5.0	31.5	14.7





One exception to the general trend in farm woodlots is in the production of maple products. In recent years, there has been a marked revival in the interest in this activity. However, the true extent of the revival tends to be statistically masked by the inclement weather during the collection period of the past couple of years, which has curtailed the flow of sap.

#### 6.4 Exports of Ontario Forest-based Products

For Canada as a whole, the value of exports amounted to \$25,301 million, or 20.9 per cent of the Gross National product, in 1973. Ontario accounted for \$10,930 million in exports, or 43.2 per cent of the Canadian total.

The value for forest-based products by kind, exported by Ontario, and Canada is given in Table 36, which also shows this province's share of total exports in forest-based products.



TABLE 36

EXPORTS OF ONTARIO FOREST INDUSTRY PRODUCTS, 1973

Commodity	1966 (Million \$) Ontario	1973 (Million \$)		1973 Ontario as a % of Canada
		Ontario	Canada	
Logs, bolts and round timber	1.7	1.3	14.7	9.0
Pulpwood	7.9	2.9	12.3	23.7
Pulpwood chips	-	1.6	15.7	10.2
Lumber & other sawmill products	31.0	104.7	1,690.6	6.2
Millwork	0.2	5.7	10.9	51.7
Veneer, plywood and other fabricated materials	15.9	24.8	147.4	16.8
Wood pulp	102.4	157.2	1,054.2	14.9
Paper for printing	237.0	300.8	1,338.3	22.5
Fine paper	5.5	21.1	35.2	59.8
Tissue and sanitary paper	1.3	0.5	6.2	7.4
Wrapping paper	3.8	9.0	59.7	15.1
Paper board	3.4	4.1	68.2	6.0
Building paper, building board and wet machine board	0.8	2.6	29.1	9.1
Converted paper products	3.8	11.6	16.9	68.7
Other crude, and waste and scrap materials	6.1	2.7	15.3	17.9
TOTAL	420.8	650.6	4,514.7	14.4











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